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IMMUNITY IN THEORY, EXPERIMENT AND PRACTICE.*

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ANTIGENS AND ANTIBODIES

Toxins and other substances have the power when introduced into the susceptible animal body to induce the formation of specific antibodies. All substances with this property may be classed as antigens. Any cell that can bind antigens and produce receptors may produce antibodies also. This power is probably widely spread among the cells of the body. Antibodies may form *in loco* where antigens are deposited as shown by Römer, who found that treatment of the conjunctiva of one eye with abrin gave rise to antiabrin in that eye only, and by v. Dungern who found that specific precipitin was formed in the treated eye only and nowhere else.

Bacteriolysis, or the solution of bacteria by normal and immune serum, is a complex process. Late investigations have shown that there is no concordance between natural immunity and the bactericidal power of the serum as now understood. Thus human serum is strongly typhocidal, yet as typhoid fever establishes itself there develops a typhoid bacillemia. On the other hand, dog serum is not harmful to anthrax bacilli and nevertheless the dog is naturally immune to anthrax. The serum of normal animals and of man contains several haemolytic and bacteriolytic bodies, and by immunization with animal and bacterial cells, as well as cellular disintegration products, the amount of these substances may be increased or entirely new lytic substances may be produced in a specific manner.

The attached or free cell constituents or receptors that give rise to lysins have been called lysogens. Conradi, Neisser and Shiga, Strong and others have demonstrated that autolysis of typhoid, dysentery and cholera bacteria killed by heat, sets free bacterial receptors—lysogens—which on injection in sterile filtrates, give rise to immune bodies, i. e., to active immunity. Wassermann, on good experimental basis, recommends for artificial immunization against typhoid fever and cholera, powder obtained by evaporation in vacuum of the fluid that results when suspensions of bacteria are killed

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by heat and allowed to digest themselves. Both normal and immune lytic serum causes lysis by virtue of two distinct interacting substances, one that as a rule is destroyed by heating at 55° C. for thirty minutes, the complement, and one that is more thermostable (Bordet). Serum that has lost its lytic power on account of destruction of the complement by heat or otherwise is said to be inactivated; it may be reactivated by the addition of fresh serum containing the suitable complement only. The thermostable body, commonly called immune body or amboceptor, is the one that is produced in a specific manner during immunization.

Amboceptors are fairly stable bodies; heating to 60° C. for 20 hours has no marked effect upon them, but heating to 70° C. for one hour commonly destroys them. They are non-dialyzable and may be kept for years. Not all bacteriolytic serums are thermolabile. Alice Hamilton has found that rabbits and goats immunized to virulent pseudodiphtheria bacilli contain specific bacteriolytic substances which are rendered inactive only by heating at 88° C. for one hour. Jessie Horton finds that the anthracidal action of normal white rat serum, ascribed by Behring, Pirenne and others to its alkalinity, is more likely due to a thermostable anthracidal substance that makes its appearance as the animals grow older; soon after birth the serum is inactivated by heating at 56° C. for 30 minutes. A serum may contain amboceptors for a certain cell but not any suitable complement, as in the case of dog blood, for instance, which contains an amboceptor readily taken up by anthrax bacilli; the complement necessary to complete the lysis may be found, however, in some other animal, e.g., the rabbit. The complements are sensitive, ferment-like substances normally present in blood; and are not increased by immunization with foreign cells. Blood contains many kinds of complements, and not merely a single one, as usually claimed by French investigators, and the complements in different bloods may differ as to the affinities of their haptophore groups. This is illustrated by the presence in rabbit serum of a complement for the anthrax amboceptor in dog's blood, none of the complements of which fit the amboceptor.

The efforts to develop a curative serum therapy of the human infections caused by bacteria giving rise to bacteriolytic immunity are still in the experimental stage. So far treatment of established infections with immune bacteriolytic serum has not given the desired results in a positive and unequivocal manner. It is quite evident that a further insight is necessary into the nature of the so-called endotoxins as well as into the complex metabolic changes initiated by them as they are set free in the infected body. Of late, the view is gaining ground that the diseases of this class of which typhoid fever is perhaps of greatest direct interest to us, are due not solely to specific bacterial intoxication, but in larger degree than at first believed to poisonous substances derived from abnormal changes in the constituent elements of the host. On the other hand the knowledge of the mechanism of bacteriolytic immunity is proving of great assistance in devising harmless yet effective means of preventing certain diseases—cholera, typhoid, dysentery, pest,—by active immunization. For the purpose of human antibacterial inoculations, sterile material must be used and recent efforts have been concentrated upon securing the bacterial

constituents or antigens concerned in as pure form as possible, free from unnecessary admixtures with other more or less harmful substances. Thus filtrates of self-digested bacterial cultures killed by heat appear to constitute effective vaccines that are quickly absorbed without causing much local reaction. Dried, powdered products of autolysis of typhoid bacilli, killed by heat, are recommended by Wassermann for artificial immunization against typhoid fever in persons especially exposed to the disease. Wright's antityphoid inoculations of British soldiers in the Boer war were made with crude bacteria, killed by heat, and although the practical results are difficult to estimate, the outcome appears to have been fairly successful. The degree of active bacteriolytic immunity is measured by determining the specific bactericidal powers of the serum. For 4 or 5 days after inoculation there may be a distinct fall in the bacteriolytic powers and presumably in resistance to infection. This period which may prove fateful to the patient, is believed to correspond to the occupation and consequent overproduction of cellular receptors, while the liberation of amboceptors upon a large scale is not yet under way. Acquired bacteriolytic immunity, experimental and otherwise, may be conceived to depend upon the circumstance that destruction of the invading bacteria now is hastened to completion before chance is given for their multiplication to the extent that adequate doses of poison, however produced, are yet free. The relative immunity that appears to persist for some time, even after the excess of bacteriolytic substances have passed out of the blood, has been explained as dependent on an abnormal sensitiveness of the cells, which now react with greater promptness and efficiency than before setting free abundant antibodies on slight stimulus.

OPSONINS AND PHAGOCYTOSIS

After accounting for immunity through the agency of antitoxins and other antibodies, there remain a number of infections in which phagocytosis probably plays the essential rôle in the destruction of the invading microbes, and the recent discovery by Wright and Douglas of the presence in normal blood of certain substances, called by them opsonins, which render various bacteria susceptible to phagocytosis, has stimulated anew the interest in this process. It has been shown conclusively that phagocytosis of many bacteria by the leucocytes of normal animals, including man, is wholly dependent on these special substances which become attached to the bacteria, and in some as yet unknown manner so change them that they are readily taken up by polymorphonuclear leucocytes. Leucocytes, freed from serum by washing, do not take up bacteria suspended in salt solution. Bacteria, treated with opsonic serum and then freed from serum by washing are taken up by washed leucocytes. Bacteria so treated may be designated as sensitized, but sensitized bacteria are not necessarily altered recognizably in form or function and many bacteria, e.g., staphylococci, streptococci, pneumococci, and anthrax bacilli multiply freely in serums that contain opsonin.

Normal human serum contains opsonin for staphylococci, streptococci, avirulent pneumococci, diphtheria bacilli, meningococci, typhoid bacilli, anthrax bacilli and tubercle bacilli, and probably many other bacteria. It has been found that the opsonin in the blood of one species

may sensitize bacteria for phagocytosis by the washed leucocytes of a different species. Most normal opsonins are destroyed or rendered inactive by heating at 54-60° C. for 30 minutes, some being more resistant than others. There is abundant evidence to show that immunization with suitable bacteria and red corpuscles may give rise to immune opsonins. Wright and Douglas noted a marked increase in the opsonic power of patients suffering with chronic staphylococcus infections, after injections of 0.75—1 c. c. of heated broth cultures of staphylococci. They also found the opsonic power with respect to tubercle bacilli greatly increased in response to inoculations of a tubercle vaccine. In the blood serum of rabbits immunized with goat blood, there is present in addition to the hemolysin, a substance that renders the red corpuscles of the goat and also of other animals susceptible to phagocytosis by the leucocytes of the guinea-pig, dog, and man. When blood corpuscles and leucocytes are mixed with the specific serum, heated to destroy the complement, and placed at 37° C. for one hour then the leucocytes become crowded with corpuscles, whereas in controls with normal serum or NaCl solution there is no phagocytosis. This substance is probably different from lysin and agglutinin because these may be present in serums without any effect upon phagocytosis. By means of absorption experiments, it is easy to show that the substance in question acts upon the corpuscles, which take it up, and not upon the leucocytes, resembling in this respect the substances (opsonins) with analogous actions upon bacteria. The increase of opsonin in the serum of immune animals is shown very well in some experiments forming the basis of a table which I have taken from an as yet unpublished article by Miss Hamilton.

Now the demonstration that opsonins render various bacteria susceptible to phagocytosis does not prove fully that these substances are of any importance in infections. It must be shown that virulent streptococci and other organisms are destroyed within or by the phagocytes, that phagocytosis is essential for the destruction of certain bacteria by the blood. This was done so far as experiments in the test tube go, by Denys when he demonstrated that in mixtures of normal rabbit leucocytes and normal rabbit serum there was little or no destruction of virulent streptococci, whereas when immune serum was substituted, prompt phagocytosis with complete destruction of the streptococci took place. The serum of normal persons and of patients with streptococcus infections has no streptococcidal effects but constiutes a good medium for streptococci. G. F. Ruediger has shown that normal defibrinated human blood has streptococcidal effect, that blood from patients with acute infections and leucocytosis has much greater effect, and that the higher the leucocyte count the greater this effect. He shows, too, that the opsonin in the serum must be present in the mixtures in order that streptococci may be destroyed. It is extremely probable that the relative immunity of the dog to anthrax is due to phagocytosis. Virulent anthrax bacilli grow freely in normal dog serum and in suspensions of washed dog blood corpuscles. They are destroyed, however, in defibrinated dog's blood and the destruction is associated with marked phagocytosis. Destruction also takes place when normal serum is added to

washed corpuscles and when bacilli, sensitized in normal serum, then washed, are mixed with washed corpuscles or leucocytic exudate. The essential rôle of intraleucocytic destruction of the bacilli is shown in plate cultures made with decreasing quantities of blood, a fixed quantity of bacilli, the total quantity being kept at 1 c.c. in all cases by adding normal dog serum. The destruction decreases as the leucocytes decrease. The prompt and pronounced phagocytosis observed by various investigators of different bacteria in the peritoneal cavity in the presence of specific immune serum, indicates that opsonins play the same part *in vivo* as *in vitro,* and it may be concluded that in opsonins we have a new form of antibody that must be reckoned with especially in the explanation of immunity to and healing of those infections that are caused by bacteria such as streptococci, staphylococci, pneumococci, etc., the destruction of which is not at all or at least not readily accomplished by free lysins.

I wish to emphasize the practical importance of these recent investigations by a brief reference to the treatment of certain infections by the use of vaccines prepared from the corresponding bacteria and to antistreptococcus serum. Reference was just made to the fact that in chronic staphylococcus infections (furunculosis, sycosis, acne) Wright found the phagocytic power of the blood much less than in healthy persons. In order to increase the phagocytic power Wright injects the patients subcutaneously with 0.75—1 c. c. of a staphylococcus vaccine, made by heating at 65° C. for 20 minutes three weeks old broth cultures of staphylococci isolated from the boils. The phagocytic power now increases markedly and this increase depends not upon direct stimulation or change of the leucocytes, but upon increase in the opsonin as shown by the fact that in this serum washed leucocytes from both normal and immunized persons take up a larger number of staphylococci than in normal serum.

Without going into details the practical results described by Wright and Bulloch certainly appear very promising. The treatment of intractable cases of localized tuberculosis by means of minute doses of Koch's new tuberculin, which is an emulsion of ground tubercle bacilli, has given very favorable results in the hands of Wright and others and at least one of the reactions following tuberculin injections has been found to be an increase in the opsonic power of the serum with respect to tubercle bacilli. This interesting and at first paradoxical form of therapeutic inoculation of vaccines in persons infected with the corresponding bacteria may be conceived to owe its beneficial effect to the more sudden production in larger quantities than under the existing conditions of the substances necessary to destroy the infective agents. But this phase of the problem merits much further investigation. It is most interesting to observe, however, that Behring's widely-heralded but as yet only tentative remedy for tuberculosis is based on this same general principle, the method consisting of the use for protective and curative purposes of certain otherwise harmless constituents of the tubercle bacillus. We can readily see that in this instance Behring appears to be following paths that are already broken. In the terms of modern immunology "the curative element" of the tubercle bacillus which

Behring believes he has succeeded in isolating would be certain antigens, which under suitable conditions in the living body give rise to formation of specific antibodies, among which we are permitted to infer from Behring's rather ambiguous statements that those concerned in phagocytosis are considered by him to be of special importance.

The only serum at present used for curative purposes that is of special interest from the view of phagocytosis is antistreptococcus serum. Much of what may be said as to the nature and mode of action of antistreptococcus serum in animals is probably also in the main applicable to antipneumococcus serums. The plasticity of streptococci has stood as a barrier in the way of securing direct experimental evidence as to whether or not antistreptococcus serums have any specific effects on the streptococci in human infections. The serums obtained by immunization with streptococci derived directly from human sources have little or no effect upon animals infected with virulent streptococci. Consequently, we have at present no method of obtaining knowledge of the presence or absence of specific antibodies in these serums. There is no reason to believe that the agglutinative properties of antistreptococcus serum give any indication as to its antistreptococcidal powers. We are consequently without the necessary means to test the properties of antistreptococcus serums upon the streptococci engaged in human infections. This leaves us without adequate control of the strength and composition of the serums offered for use. In the serum of immunized rabbits and horses, normal leucocytes were found to possess marked phagocytic power on virulent streptococci, a power which Denys and Leclef as well as others ascribe to the action of the serum upon the leucocytes, but which I maintain we now know is due to the action of an immune opsonin upon the streptococci, thereby changing them in such a way that they are taken up by the cells. Consequently immunization with animal-virulent streptococci may give rise to more or less specific opsonins that render virulent cocci subject to phagocytosis and presumably also to intraphagocytic destruction. It is possible that the study of the opsonic action of therapeutic antistreptococcus serum, and of phagocytosis of streptococci in vitro under its influence, may give us some indications in regard to the question whether the serum contains specific substances for human streptococci. It is possible that part of the beneficial clinical results attributed to antistreptococcus serum may be due to the production of an increased leucocytosis.

The Uses and the Abuses of the Free Dispensary.—R. Oliver Kevin (Philadelphia) divides those who patronize free dispensaries into four principal classes: (1) Those able but not willing to pay; (2) those who, not knowing a specialist, want to find one without being compelled to pay a specialist's fee; (3) poor, suffering unfortunates, who either by drink, misfortune, ignorance, or poverty, are forced to avail themselves of a dispensary's charity; and (4) hypochondriacs, who find, or try to find, relief from their fancied ailments in the different departments of a hospital dispensary. He believes that one reason for the abuse of dispensaries lies in the fact that it is to the interest of those connected with the institution to have, if possible, a large service, also that while dispensaries continue to afford practice, experience, and reputation to young doctors, and old ones, too, for that matter, and "something for nothing" to the general public, the number of patients will not diminish and physicians will always be applicants for vacancies.—(*American Medicine*, February 24, 1906.)

VAGINAL AND UTERINE PROLAPSE*

J. H. CARSTENS,
Detroit.

In the unmarried and nullipara, prolapse is very rare, unless due to pressure from above or hypertrophy of the cervix. In my experience, the latter condition is not often met with, although I have read a good deal about amputation of the cervix, which is the proper operation in these rare cases. When there are tumors of either the uterus or ovaries, they will require special operation, according to the character of the growth. The fortunately rare conditions of injury will require a plastic operation according to the character and severity of the lacerations. With these few remarks, we can dimiss this part of the question.

Prolapse is consequently only found after child-bearing, and here we have various conditions producing it. At the head of the list, we can put lacerations of various kinds. The lacerations are of various types of severity, are in different directions, and are more or less extensive. Each is a law unto itself and the operation must vary with the condition found. This refers especially to the laceration of the perineum. In many of these cases, we find accompanying it, a relaxed condition of the vagina; in fact, with some cases, we find a relaxed condition of the vagina and perineum without any tear, that is a subinvolution of the vagina; in others, no tear in the mucous membrane or the skin, but a tear of the perineal fascia, and some of the muscles are retracted allowing the pelvic floor to give way, resulting in descent of the uterus, bladder and rectum. Where this condition is found as the result of subinvolution of both the uterus and the vagina, by proper constitutional and local astringent treatment, the symptoms will subside, and tone will be restored to the pelvic floor without any operative procedure.

In some of the cases, the vagina and perineum are virtually intact, but the patient, in lifting and straining, or getting up too soon, causes the uterus to simply descend. In this class of cases a simple pessary will relieve the patient, as the uterus has its proper circulation restored by being kept in correct position, and by hygienic treatment the patient, in a couple of months, will be relieved without an operation. This, however, can only be brought about by having proper treatment instituted as soon as this condition is noticed, that is soon after confinement or miscarriage.

We then have a large class of cases which we only see a long time after the condition is established. The average cases, with a rectocele and cystocele and descent of the uterus, the latter going probably just at the vaginal outlet, are found in many women who pay no attention to their condition until it becomes very distressing and causes a number of symptoms. Hence, most of the cases we see are old. Some of the simple methods of treatment, which could be carried out by the general practitioner, are of no avail, but some operation, sometimes quite complicated, must be resorted to. If the uterus is small, repair of the laceration of the perineum (sometimes with an anterior colporrhaphy) will restore the woman to a nearly normal condition. But here again

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it depends a great deal upon the age. If the woman is in the childbearing age and liable to become pregnant again, the narrowing of the vagina and removal of the mucous membrane, I consider to be bad practice, as we are bound to have a fresh tear through the weak scar tissue. In such cases, we should always make a flap-splitting operation and keep the mucous membrane and submucous elastic tissue intact so that it may relax in a future labor without tearing. In some of these cases, the uterus is retroverted and if it is small, a Mackinrodt or Dührrsen operation, done at the same time, will often give much relief.

If, however, the uterus is large, a simple plastic operation on the pelvic floor will be of no avail. Some abdominal operation must be performed. Sometimes an Alexander operation is enough. Where there are ovarian and tubal diseases with adhesions, they require an abdominal operation after a plastic operation has been performed, and this can be done at the same time. And then it depends on circumstances what should be done. Sometimes an ovary or tube will have to be removed, sometimes adhesions need only be liberated or the shortening of the round ligament be made or a Gilliam operation or a ventral fixation. I simply mention these points; it is out of the province of this paper to go into operative detail.

But I want to emphasize the fact right here that a plastic operation is insufficient in many cases to restore parts to even a nearly normal condition, and I have seen many cases not cured that have been promised relief and freedom from symptoms, by simply sewing up the tear in the cervix and restoring the ruptured perineum. The large uterus or the diseased condition within the pelvis was overlooked.

These operations must be varied according to the case; no absolute rule can be laid down. In fact, often after laying out a plan of action in our own mind and after opening the abdomen, we find different and unexpected conditions and must change the whole operative procedure. So much also depends on the woman, her age, her future prospects of pregnancy, her great desire to have children in the future, that in a short paper like this I would not attempt to cover the whole ground.

There is, however, another class to which I want to call your attention, that is the prolapse in old women, where all these different plastic operations are of no avail and where the uterine fixation or suspension offers the only hope of relief, if we except hysterectomy. When a woman is past the childbearing period, it has also seemed to me that the opening of the abdomen and fixation of the uterus, in whatever way you do it, is really a more dangerous operation than the complete removal of the uterus by vagina. In rare cases, a pessary, of some kind, will keep the parts in place and make the woman fairly comfortable, but the resulting erosion, discharge and discomfort of wearing an instrument, no matter of what kind, is so great that as a rule I recommend vaginal hysterectomy. This can be performed in a very few minutes with very little danger and by sewing the broad ligament together and closing the pelvic floor, the woman is relieved and enabled to do even hard work.

In conclusion, I will say:

1. Prolapse is rare in nulliparæ.

2. If due to subinvolution and seen early, it can be often relieved by supports, with local and constitutional treatment.

3. If due to lacerations, these can be repaired by plastic operations, but the

mucous membrane must be preserved in those of childbearing age.

4. The latter operation must be amplified by abdominal section, if there is pelvic trouble.

5. In very rare cases, an Alexander operation is indicated, but when the abdomen must be opened on account of other conditions, it is best to make one of the intra-abdominal shortenings of the round ligaments or some kind of ventral suspension.

6. In the old, those past the menopause, a plastic operation will be of no avail. A vaginal hysterectomy will be less dangerous and give better relief than an abdominal suspension.

EPILEPSY.*

WM. A. POLGLASE.
Lapeere.

In ancient times, epilepsy, like insanity, was regarded with superstitious awe, and the belief was generally held that the subject of the disease was possessed by a demon from which he vainly strove to free himself, or was suffering punishment inflicted by a deity whose anger he had incurred. Hippocrates, however, did not accept this theory, and boldly asserted that the disease originated from natural causes and that men regarded it as of divine origin purely from ignorance. That the disease was not only well known but that there was also a fine conception of an attack, even twenty centuries ago, are proven by some verses of Lucretius:

"Oft, too, some wretch, before our startled sight,
Struck as with lightning, by some keen disease,
Drops sudden:—By the dread attack o'erpowered,
He foams, he groans, he trembles, and he faints;
Now rigid, now convulsed, his labouring lungs
Heave quick, and quivers each exhausted limb.
Spread through the frame, so deep the dire disease
Perturbs his spirit; as the briny main
Foams through each wave beneath the tempest's pest's ire.
He groans, since every member smarts with pain,
And from his inmost breast, with wontless toil,
Confused and harsh, articulation springs.
He raves, since soul and spirit are alike
Disturbed throughout, and severed each from each,
As urged above distracted by the bane.
But when, at length, the morbid cause declines,
And the fermenting humours from the heart
Flow back—with staggering foot the man first treads,
Led gradually on to intellect and strength."

This conforms very nicely to our own conception of a seizure. From the dawn of history, the disease has been enveloped in mystery which is not even now dispelled, and into which it may be said the light of science has not practically penetrated; only during the past twenty years, has much advance been made in scientific knowledge of the subject, and only within a period of between thirty or forty years, has any considerable effort been made to ameliorate the condition of epileptics. So high an authority as Dr. Ira VanGieson says: "All the facts which the pathological anatomist and physiological chemist have gained in the

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study of this dire malady give no explanation of the *process* that gives rise to the epileptic phenomena." After discussing various theories as to the cause of epilepsy, Dr. Wildermuth, of Stuttgart, writes: "We should still be in ignorance of the real nature of epilepsy even if we knew the cerebral origin of the separate attacks. Anatomic investigation has as yet shown us no lesion which can be deemed characteristic for epilepsy."

The following definition is given by Landon Carter Gray: "Epilepsy is derived from the Greek word, epilanbano, meaning the 'falling sickness,'" as a loss of equilibrium was the first phenomenon that attracted attention. But since that time the term has been applied to a far wider range of phenomena, which are characterized by a sudden loss of consciousness, with convulsions affecting muscles in varying degree, or loss of consciousness without muscular implication, or muscular convulsions without loss of consciousness; and it is also given to a condition of alternating consciousness, as well as to certain mental phenomena which are supposed by some authors to be equivalents of the convulsive or comatose symptoms.

Dr. Frederick Peterson calls epilepsy a functional disease of the brain, in which the chief feature is a sudden loss of consciousness. The loss of consciousness may be complete or incomplete. Generally it is accompanied by spasms.

We have two general types of attacks expressive of the epileptic condition—*grand mal* and *petit mal,* one representing the more severe and the other the lighter attacks. They may come on frequently each day or once in two or three days, or several times a month, or in some instances years apart.

We have come to know that epilepsy does not always manifest itself in the severe or typical form. There is an infinite variety of expression, varying in intensity from the merest flash of drooping consciousness to the most terrible and violent throes of muscular activity, so severe that blood vessels rupture in the superficial or deep lying structures or that dislocation of the joints or fracture of the bones occur, or they may be of so slight a nature that a patient may have a mild type of epilepsy for years without any one having knowledge of its existence.

Other types of the disorder have been variously called cursive, laryngeal, vertigo, alcoholic, hystero-epilepsy, cortical epilepsy, or Jacksonian (after J. Huhlings Jackson), and numerous others that are grouped under the head of reflex epilepsy, a term that is apt to be misleading and should more properly be captioned as eclampsia, epileptiform or epileptoid seizure.

One form of epilepsy which should especially engage our attention is the so-called mental type, known as psychic epilepsy, including that of double consciousness and described by Peterson as follows: "There is in this no loss of consciousness, not even a subconscious state; no cry, no fall, no spasm, however light, of the muscles, but simply a sudden and ordinarily, a transitory change in the mental condition of the patient. This is known as pure psychic epilepsy. It is often the case that mental changes also precede or follow ordinary epileptic attacks. These mental changes are incident to the seizures, but there are psychic outbursts which take the place of the attacks, and it is to these I now allude.

We thus see the difficulty of offering

an exact definition of epilepsy. The best definition would be that epilepsy is a disease of the nervous system characterized either by frequently recurring convulsive attacks with loss of consciousness, or by partial manifestations of these symptoms, or by psycopathic substitutes, concomitants, or results.

There is no question in my mind but that there is still open a large field for investigation, by experts in morbid psychology, relating to the cause of deranged consciousness and peculiar psychic changes in epilepsy, for the ordinary symptoms or expression of the malady are pretty well defined.

There are many factors that bear relationship to the etiology of epilepsy, or in other words that predispose the individual to the action of that specific undefinable agent which is manifest as the result, when the nervous mechanism governing the normal process of the body and often of the mind is deranged. Prominently among the numerous disorders may be mentioned organic, brain, spinal or peripheral lesions, traumata, lesions or impairment of function of non-nervous organs, malnutrition, hysteria, syphilis, meningitis, (cerebro-spinal, tubercular, suppurative) tumors, abscess, ear disease, sclerosis of the brain and cord, cerebral palsies of childhood, due to proencephalus, hemorrhage from the cerebral arteries, embolism of the cerebral arteries or veins.

The influence of heredity, as a cause of epilepsy, is most striking and the estimate that it is a prime factor in more than one-third of the cases is extremely conservative. It has been said that "epilepsy is one of the equivalents in polymorphine heredity and so the descendants of pronounced neurotics will generally manifest in one of many forms of epilepsy, chorea, neurasthenia, hysteria, somnambulism, migraine, feeble-mindedness, idiocy, insanity, inebrity, criminal tendencies or simple eccentricity. These so called hereditary equivalents may appear in a neurotic family from generation to generation. They are the interchangeable manifestations of an unstable nervous system.

Here is shown the importance of making careful inquiry into the family history of any case of epilepsy.

The abuse of alcohol is another important cause, producing in the inebriate alcoholic epilepsy and a more potent factor in the causation through alcoholic hereditary degeneration. "Thus alcoholism in parents is prone to induce epilepsy and other evidence of nervous instability in the children."

I believe that injury to the head at birth is not an infrequent cause of epilepsy, as well as infectious diseases acting on the parents or on the patients themselves; frights or other emotional shocks either to the pregnant mother or the child, and a variety of obscure toxic conditions.

"The reputed condition, known as reflex epilepsy, i.e., convulsions brought about by irritation of peripheral nerves, such as disorders affecting the visceral nerves in the pelvis, the nerves of the gastro-intestinal tract, the nerves of the nose and of the ear, the nerves associated with the eye, etc., is undoubtedly the rarest form of epilepsy known. I can frankly say, among several thousand cases observed by me, I have never yet met with a case of epilepsy due to a reflex factor, though I have always made it a point to seek such a cause.

Females are rather more subject to epilepsy than males and by far the largest

proportion of cases occurs under nineteen years of age, most frequently from 10 to 29 years. After the latter age there is a rapid decrease in frequency until the cases become very infrequent after 50 and seldom occur after 60 years of age. The following table is taken from a report of 125 cases in the Ohio Hospital.

Infancy	339 cases
5 to 10 yrs.	194
10 to 15 yrs.	296
15 to 20 yrs.	173
20 to 30 yrs.	159
30 to 40 yrs.	61
40 to 50 yrs.	20
Over 50 yrs.	14
Unknown	39

18 per cent. had relatives epileptic.
8 per cent. had relatives insane.

An estimate of the number of epileptics in the community shows that there are two to every one thousand of the population; of these, 68 per cent. are either imbeciles or idiots and only two per cent. are normal, while the remaining difference is made up of the insane, cranks, and disagreeable persons generally.

Epilepsy is a peculiar disease of whose pathology we know little or nothing, and yet it would not be presumptious to say that we have been able to limit its position in the organism to the cortex of the brain, "It is not an organic disease but what we call a functional disorder, a neurosis, and as yet neither the naked eye nor the microscope has been able to discover any changes in the brain cells or in the fibers that can be considered constantly and distinctively associated with epilepsy." Of the many theories of the specific cause of epilepsy, promulgated in the past and tacitly accepted here and there to-day, I desire to mention one that has but recently appeared, with such high scientific endorsement that it has deeply interested me, inasmuch as a recent case in my experience would tend to confirm the theory. Quoting from an article in the December number of the *Journal of Nervous and Mental Diseases.* "Turning from the empirical results of dietetic investigations to the recent chemical-pathological studies of epilepsy, there is good ground for the assumption that the various manifestations of this disease are probably dependent upon a disorder of nitrogenous metabolism, and upon nothing else. This disorder is supposed to consist in the formation of a poisonous substance, which is either not formed at all in the normal state or exists only in harmless quantities, and which in epilepsy accumulates in the body more or less rapidly, causes vertigo, convulsions and psychic equivalents, and during the seizures is converted into urea—the final product of proteid metabolism. In other words, in epileptics at a certain stage in the process of conversion of proteid material into urea, there is a hitch, and abnormal, often violent, activity of the nervous and muscular tissues becomes necessary for the completion of this process of conversion."

"That a substance capable of producing convulsions and other phenomena of epilepsy actually exists in the blood of patients in the *status epilepticus* has been proved by the researches of Krainsky, who, by injecting blood obtained from patients in that condition into guinea pigs, produced convulsions and paraplegia. The same observer also found in the blood of patients in *status epilepticus,* large quantities of ammonium carbamate; and he has shown that by injecting this substance into rabbits, epileptic seizures can be produced."

"Ammonium carbamate is said to be present in the blood, normally, in very small quantities and is supposed to be a

precursor of urea. Its conversion into urea occurs chiefly in the liver, and Krainsky finds further corroboration of his theory, according to which the phenomena of epilepsy are due to the periodical accumulation of ammonium carbamate in the circulation, in the experiments of Hahn, Massen, Nencki, and Pawlow. These observers have shown that when in animals an Eck's fistula is established (an artificial communication between the portal vein and the inferior vena cava), the portal circulation is thrown out of action and the ammonium salts, formed in the course of proteid catabolism, being no longer completely converted into urea, accumulate in the circulation, presumably in the form of the carbamate, and give rise to convulsions, ataxia, somnolence and coma before the animal dies."

The prognosis of epilepsy depends upon the frequency and severity of the attacks. In about 10 per cent of the cases, the frequency and severity are so great that the patients become ultimately insane. In a pronounced form of the disease, treatment either by medical or surgical means is disappointing. The disease, however, is not so hopeless as many physicians have hitherto believed, for statistics show that, under the modern care and treatment of the colony life, from 6 per cent to 10 per cent, under the most favorable conditions of age and treatment, recover and from 60 per cent. to 70 per cent., if taken in time, are made to live a comparatively comfortable life and not an inconsiderable number become quite or nearly self supporting, or made orderly and useful members of the community. As the largest number are children or young persons, too much stress cannot be made to urge an early vigorous measure for amelioration. The average duration of life, after the manifestation of the disease, is 11 years.

The treatment of epilepsy should be viewed from two standpoints, that of prophylaxis and that of amelioration of the condition of the victims. The betterment and uplifting of the human race by the recognition and appreciation of the laws of heredity, the prevention of marriage of the denegerate and physically unfit, the abolishment of the common enemy, alcohol, and such social evils as tend to the production of neuroses are some of the conditions to appreciate and understand in their baneful effects in the production of morbid heredity. And this must necessarily be a matter of general education of the people.

The amelioration of the condition of the epileptic is one that would require more time for elaboration than I could be allowed in a paper that has possibly become already too tedious and lengthy. I simply desire to say that the colony plan, with its methods, offers the best and most adaptable methods for his care and treatment. Another means lies in securing the endowment of scientific laboratories where the best pathologists, psychologists and chemists may join together in studying the causes and methods of treatment of the disease. Every special institution for epileptics should generously maintain a pathological institute, and no money could be more advantageously appropriated or given, whether by state or private philanthropy, than money devoted to this end.

In conclusion, I wish to add that epilepsy is a condition or factor which may be engrafted upon any or all types of persons, but more especially manifests itself in degenerates of all degrees and classes, intensifying and distorting during their

seizures or status state, an otherwise tractable and peaceable disposition. Some are incapacitated nearly all of the time, while others have varying periods when they are well, strong, and healthy looking, and able to work and study as are other people. But no matter how they may be endowed mentally, or with what grace of person, their lives are under a deep shadow. Every avenue to progress and development is closed to them. If, as in the case of one-half of all who have epilepsy, the attacks begin in early childhood, they are not admitted to the public schools and unless they have other means of procuring an education, they must grow up in total ignorance. They are denied employment because nobody will have them when it is known that they have "fits." If they attend church or any place of public amusement, they cause confusion and alarm. They are a burden to their friends and associates, and to the community in which they live, and have been the *bête noir* of every public or private institution in which they have been placed. Many of them are not only quiet, but even attractive in many of their ways, but sooner or later they are bound to become deeply demented, or slowly enter a state of apathy and mental hebetude and idiotic state, frequently dying in sharp attacks of the malady, or receiving injuries, as they are in constant danger of accident from falling.

These unfortunates are debarred from all the privileges of society, and being left to themselves and leading lives of idleness, often with no one to direct them, it is not surprising that many fall into evil ways, become victims of the irresponsible or have their lives steeped in crime.

THE SPIROCHAETE PALLIDA*

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Since the advent of bacteriology, more than twenty different organisms have been credited with being the etiologic factor of syphilis, this rôle having been filled by bacteria, yeasts and protozoa. On this account, we should carefully consider any new discovery claiming this significance. The latest aspirant for this position is the spirochaete pallida, and none of its predecessors has so nearly fulfilled the requirements as this organism.

The spirochaetes, as a group, have never been successfully cultivated artificially, and in this group we place the spirillum of relapsing fever and the spirochaetes of chickens and geese; therefore, we must rely on their staining and morphologic characteristics to identify them.

In May, 1905, Schaudinn and Hoffmann reported finding a spirillum in the secretions of a number of cases of syphilis and this organism they called the spirochaete pallida. They demonstrated it in the smears from primary lesions, papules, enlarged glands, and by aspiration from the spleen. The characteristic shape and winding of the spirillum served as the point of differentiation between the pallida and others of the same species;

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they also demonstrated it in the experimental syphilis of monkeys.

Metchnikoff, Roux and a number of other observers soon verified the findings and the former workers proved conclusively that syphilis can be transmitted to anthrapoid apes, gorillas, orangoutangs, and chimpanzees, obtaining positive results in all their inoculations. The inoculations were made on the genitals and eyelids, the stage of incubation being from 22 to 37 days. After ulceration of the primary lesion, enlargement of the lymph glands followed, the secondary manifestations appearing one month later and resembling those found on the human subject. From the mucous patches of the mouth, other monkeys were successfully inoculated. These experimental lesions are identical with the syphilitic manifestations in the human.

The spirochaete pallida, as its name implies, is a spirillum, 4 to 14 microns in length and one-quarter of a micron in diameter, having from 4 to 14 closely wound convolutions; it stains with difficulty and then only slightly, hence its name—pallida. Even in the best stained specimens, it is found with difficulty and it is necessary to use high power lenses. In most preparations, there are but few of the organisms found on a cover slip. An apochromatic, 2 m. m., oil immersion objective and a number 8 compensating eye piece are best adapted for observing this body, as with a lower magnification, only the very long spirals can be seen and the coils are made out with difficulty.

Schaudinn's observation of the organism in the living state, in the hanging drop, showed it to have a rotation on its long axis which gives it a backward or forward movement as well as bending. The same author has succeeded in demonstrating flagella which are sometimes confined to one end or may be found on both. Physiologic saline does not affect their motion, which may be retained for six hours; glycerin, however, arrests it in from 5 to 10 minutes. In the living condition, the spirochaete pallida is highly refractive and retains its spiral form even in the fixed condition, whilst other spirilli merely appear undulated; the ends of the spirochaete pallida are pointed.

Spirilli are found in many ulcerative processes and are to be differentiated from the spirochaete pallida. The one most commonly found is the spirochaete refringens and differs from the pallida in that its body is thicker, its convolutions are not so closely wound nor are there so many, it is not flagellated and its ends are rounded, while its motion is more active than that of the spirochaete pallida. A valuable means of differentiation is the readiness with which the refringens stains, in marked contrast to the poor staining qualities of the pallida. Having made the smears, they are to be fixed; the method of accomplishing this varies with the different researchers. Schaudinn's original method was to employ osmic acid vapor, allowing it to act on the fresh smears; a perfectly satisfactory method, however, is to fix in absolute alcohol 15 to 20 minutes or in pure methyl alcohol 2 to 3 minutes. Formic aldehyde vapor may be used.

Many methods of staining have been tried and those which have been successful are gentian violet, carbofuchsin. Rominowski and Giemsa's method. In employing the gentian violet method, 10 gm. of gentian violet are heated with 100 c. c. of water for two hours; the solution is then allowed to cool and is filtered; smears are fixed in alcohol; stained for 15

minutes, washed in water and mounted or the stain may be used hot for 20 to 30 seconds. I have not found this stain to be satisfactory. Wrightman advises mordanting with 2 per cent. solution of phosphotungstic acid, and then staining with carbofuchsin; then the spirochaete pallida are thicker and easier to see but it is impossible to differentiate them by this method. Giemsa's stain is the one which has now supplanted all others and which has universally given good results. The formula for this stain is:

Azurl 2 Eosin	3.0
Azur 2	.8
Glycerin C. P. (Merck).....	250.0
Methyl alcohol (Kahlbaum).	250.0

The technic consists in fixing in ethyl or methyl alcohol, drying the cover glass on filter paper and staining in a mixture of 15 drops of the stain in 10 c. c. of water, at a temperature of 30 to 40 degrees C., for from one to two hours, the preparation is then washed in a strong stream of tap water, dried and mounted. By this method, the spirochaete pallida is stained a pinkish color, while other spirochaetes are stained blue.

Some researchers have succeeded in demonstrating this organism in the blood of patients suffering from syphilis. At least one c. c. of blood should be taken and diluted to 10 c. c. with 1/3 per cent. acetic acid and the solution centrifugalized under high speed; smears are then made from the sediment, which are fixed and stained by Giemsa's method. The easiest method for obtaining the blood is to raise a superficial vein, preferably at the bend of the elbow, and with a hypodermic syringe withdraw the necessary amount of blood; this method is painless and does not alarm the patient. Blood smears may also be made and examined directly from the punctured macules of the secondary stage.

In hereditary syphilis of children, the spirochaete has been found, in numbers, in the blood; *post mortem* they have been found in the liver, spleen, kidneys and different organs of cases of congenital syphilis.

Most researchers report that they are constantly to be found in all cases of primary lesions and all the varied secondary manifestations, such as condylomata, macular and papular eruptions, mucous patches, enlarged glands, etc., and it is remarkable that all have failed to demonstrate these bodies in tertiary lesions. Schaudinn believes that there is a resting or involution stage of this organism which may again become active, and in this manner he attempts to explain the tertiary exacerbations.

Soon after Schaudinn's announcement, I attempted to find these bodies, but owing to the extreme difficulty of procuring desirable material, especially cases which had not been treated, my results at first were very unsatisfactory. I first found them in the secondary lesion of the mouth and later was able to demonstrate them in primary sores. The spirochaete refringens, at the onset, caused some confusion until the pallida was observed, after which the differentiation was distinctive. Experience has taught me that the lesion should be scraped with a sharp spoon, so as to obtain the material from the deeper tissues, and the smears should be fixed soon after making and examined shortly after staining. Although the stains advocated by different authors have all been tried, positive results were obtained only by the Giemsa stain, and it has been found desirable to stain at least from 10 to 12 hours. In spite of the fact that other au-

thors have demonstrated numbers of this organism in a field, I could find but three or four on a cover slip.

I have examined in all 14 cases of undoubted syphilis and two cases of carcinoma. Of these 14 cases, two were tertiary and in neither of them were the spirochaetes found. In the remaining 12, which were either primary or secondary, the spirochaete pallida were found in 10 cases, in the two cases of carcinoma, the pallida was not found, although other spirilli were present. I had access to material from these cases but once and the failure of demonstrating them may be due to undesirable material or to faulty technic. Following is a brief summary of the cases examined:

Case 1. A prostitute, aged 25 years, had a primary lesion of the labia in May. At present she has a large ulcer, the size of a half dollar, on the inner side of the thigh, also a marked reddening of the throat. The ulcer has been treated for some time. It was scraped with a sharp spoon and smears made from the material so obtained. On examining these smears, no spirochaete pallida could be found.

Case 2. A young man, aged 27 years, with a history of syphilis of five or six years' duration; at present, he has an ulceration of the nasal septum, evidently a tertiary lesion. Smears made from curettings from this ulcer, failed to show the presence of the spirochaete pallida.

Case 3. A young man, aged 23 years, giving a history of a primary sore of the penis four months ago. He now has mucous patches on the pharynx and tonsils, the lesions having been treated vigorously with local applications. Scrapings from the mucous patches failed to show the spirochaete pallida.

Case 4. A young man, aged 24 years, giving a history of a primary lesion, first noticed July 1st. At present, he shows an untreated ulcer of the hard palate. Curettings made from this ulcer showed the spirochaete pallida.

Case 5. A young man, aged 27 years, with a history of a sore of the penis 3 months ago. At present, he shows placques on the tongue and mucous patches on the cheeks and tonsil. Scrapings from the tongue and cheeks both show the spirochaete pallida.

Case 6. A prostitute, aged 30 years, with a history of a primary sore of the vulva 8 months ago. At present, the vulva is covered with broad condylomata. These were removed and smears made from the epithelial surface and also from the cut surface. Both preparations showed the spirochaete pallida and refringens.

Case 7. A young man, aged about 24 years, with a hard sore on the penis. Smears were made from the secretions of the sore and a few spirochaete pallida were found, also a number of other spirilla which stained densely.

Case 8. A man, aged 38 years, with a history of hard sore of the penis 5 months ago. At this time he has a number of moist papules around the anus. Smears made from scrapings from these lesions showed the spirochaete pallida.

Case 9. A prostitute, aged 32, with a history of a primary lesion 9 years ago. At present she has a large, indolent ulcer of the thigh. Smears made from scrapings of this ulcer failed to show the spirochaete pallida but a number of spirochaete refringens were found.

Case 10. A young man with a hard sore on the penis and a history of exposure. Smears were made from the secretions of the sore but no spirochaete pallida could be demonstrated.

Case 11. A young man, aged 20 years, with a hard, indurated sore on the penis and a history of exposure about two weeks before. The sore had been dressed once with calomel. After washing off the sore, it was scraped and smears were made, which on examination showed the spirochaete pallida.

Case 12. A man, aged 60 years, with a sore on the tongue and enlargement of the sublingual glands, diagnosed as either syphilis or carcinoma. Smears from the sore showed the spirochaete pallida and after the man had been placed on specific treatment for about three weeks, the swelling of the glands subsided and the sore is now nearly healed.

Case 13. A prostitute, aged 27 years, who three months ago had a chancre of the cervix; at present, she shows placques on the tongue, mucous patches on the cheeks and tonsils, and papular syphilides all over the legs, arms and breasts. Smears made from scrapings of the tongue and tonsil show the spirochaete. Blood smears made from an incised papule failed to show this organism.

Case 14. A prostitute, with a hard sore of the cervix. Scrapings were taken from the lesion and smears made, which showed the spirochaete pallida.

Hoffmann, in an article in the *Deutsche medicinische Wochenschrift* for October, 26, 1905, summarizes the work done up to date as follows:

(1) The spirochaete pallida is found with great regularity in all cases of recent syphilis.

(2) In uncomplicated cases of acquired syphilis, it is found in the primary lesion, genital papules, lymph glands, secondary exanthemata, and in some cases in the blood, without any evidence of other organisms.

(3) It has been demonstrated, by a number of authors, in the internal organs, in the specific exanthemata and occasionally in the blood of congenitally syphilitic children.

(4) It has failed to be demonstrated in otherwise diseased and normal human tissues.

(5) In the experimental syphilis of apes, it has been found by Metchnikoff, Kraus, Schaudinn and Zabolotny and constantly demonstrated, not only by inoculation with human virus but also from ape to ape, while Kraus controlling his experiments, failed to find it in healthy apes.

In conclusion, I wish to refer to the excellent paper lately published in the *American Journal of the Medical Sciences* for January, 1906, by Dr. Randal Rosenberg, of Philadelphia, who reports the findings in 34 cases, and also to thank Dr. A. H. Gorenflo for the invaluable assistance he has given me in obtaining material and in confirming my findings. My thanks are also due Drs. A. P. Biddle and R. E. Mercer for material from their clinics.

PNEUMONIA BRIEFS.

Give the pneumonia patient plenty of fresh air, but no draughts.

For the dry tongue in pneumonia, paint it two or three times a day with pure glycerin.

When rusty sputum is present, the diagnosis of pneumonia may be made in safety, even if but slight attention is given other phenomena.

In pneumonia, the highest pulse rates are found in childhood, and the younger the child, the more frequent the pulse at the same temperature.

If women are taken ill with pneumonia during the time in which their menstruation should occur, very high temperatures are usually noted.—*v. Jurgensen.*

PRESENT METHODS IN THE TREATMENT OF PULMONARY TUBERCULOSIS *

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In introducing this subject, I think it is proper to say something concerning prophylaxis. The tubercle bacillus is practically indestructible in the body; hence, the absolute protection of the human race depends upon prophylaxis. The fact that in the vast majority of cases, tuberculosis is disseminated by dried sputum and received into the body through the mediation of the lungs, leads inevitably to the conclusion that the disease may be extinguished by destruction of sputum. It is known that sputum represents something more than a mere culture soil. The sputum contains colonies of the tubercle bacillus. Diluted 400,000 times and injected into the bodies of guinea pigs, it will propagate the disease, and the bacillus, dried in the sputum upon a cloth, will retain its vitality for six months. The destruction of the sputum, outside of the body, is possible, but impracticable. It is impracticable when treating the average case in the home; first, because it is difficult, if not impossible, to make the people understand the real danger of the contagion, as they are not so impressed by the slow and steady advances of tuberculosis as by the rapid invasion and hideousness of smallpox; second, if the laity can be taught the danger we can at best expect them to carry out the details of the disinfection and care of the sputum only in an imperfect manner. But while the sputum may not be destroyed, it may be imprisoned beyond the possibility of release, and in the aggregate, much can be accomplished in preventing the spread of the disease. So long as the sputum is kept moist, the bacillus is retained in it, as no particulate body may rise from a moist surface.

It must be remembered that nothing about the patient is infectious except the sputum and the material upon which it dries. Institutions for the reception of patients, in which rules for destruction, or retention of sputum are rigidly enforced, furnish, by actual demonstration, an atmosphere most free from infection, so that it is often said that these are the places in which best to avoid the disease.

I will repeat again that one of the first principles in caring for sputum is to keep it moist. Sputum cups should be provided with covers to prevent the entrance of flies, which carry away bacteria both on their feet and in their intestinal canal. At times, use must be made of cloths, which should be changed frequently, and if not burned, should be immersed in boiling water or in a disinfecting solution. The best of these is a 3 per cent. solution of lysol. Cuspidors should never be filled with sand or sawdust, but with water. They should be so constructed that they cannot be upset. The best sputum cups are made of pasteboard and filled with wood-wool, which absorbs rapidly. The cup and its contents are burned every day. When sputum is received into water, it is not necessary to use a disinfectant, provided it is properly disposed of. When a disinfectant is deemed necessary, the best preparations are lysol and solutoe. Both of these have the advantage over carbolic

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acid in that they do not coagulate the sputum, but on the contrary, they liquify it. Spengler found that it required a 10 per cent. solution of lysol to kill tubercle-bacilli in 12 hours. Crude solutol must be present in the proportion of from 5 to 10 per cent. It is understood that these proportions include the amount of sputum, as the disinfecting solution which may be at first from 5 to 10 per cent. becomes diluted by the addition of sputum. Sputum should be disinfected in cuspidors, and not simply discharged into sewers, for Schottlelius has shown that bacilli retain their virulence for two years in the lungs of buried bodies. Sputum, in cuspidors with wide mouths, may be mixed with sawdust and burned, or in an institution, the fluid may be boiled half an hour in large vessels, or may be disinfected with the preparations mentioned. The cups, cloths, etc., may be scalded or boiled. I will not stop to speak of the disinfection of bedding, clothing, furniture, etc., as this is usually under the charge of the health officer. This matter should not be passed by indifferently, however, as it is exceedingly important that the health officer should carry out his duty thoroughly. Prevention follows absolutely with conviction as to the infectious nature of the disease.

Prevention consists: (1) In the education of the public in relation to the contagion or the infection of tuberculosis; (2) In police regulations regarding the inspection of tuberculous products in places where many men congregate; (3) in preventing the development of dust on the streets; (4) in the construction of public disinfecting institutions and suggestions as to the disinfection of houses in which the tuberculous have died; (5) in the erection of public institutions for poor, tuberculous patients.

The hope of treatment is based upon the fact universally acknowledged that tuberculosis is often cured spontaneously, and that it more frequently becomes latent or quiescent.

Action of chemicals.—Up to the present time, we know of no substance that will destroy the bacillus of tuberculosis in the body, but there are several remedies that inhibit its development. The following statements are made upon the authority of Marfan. Salicylic acid in the strength of 1:500, does not destroy the virulence of the bacillus. Bromin is efficacious in the strength of 1:1000. Phenic acid has a doubtful effect in a strength 5:100 or 6:100, but is caustic. Creosote is without destructive action in a strength of 1:1000. Hydroflurous acid destroys the bacillus in a strength of 1:4000, but is very caustic. According to Koch, the agents that succeed best in arresting the development of the bacillus of human tuberculosis, *in vitro,* are the essential oils the aromatics, like beta-naphtol, paratolindin, certain anilin colors as fuchsin, methyl-blue and gentian violet. Next come the mercurial vapors and the combinations of silver and especially those of gold with hydrocyanic acid. Thus gold cyanide prevents the multiplication of the bacillus in a solution as weak as 2:1,000,000. Koch adds, however, that none of these substances suffices to cure a tuberculous animal.

Therapy.—Attempts to secure immunity by injecting the blood serum of an animal refractory to tuberculosis, or by serum of a tuberculous animal, after the manner pursued in tetanus, diphtheria, etc., have failed because there is no absolute immunity.

The one specific contribution which we possess is the glycerin extract from the tubercle bacillus, obtained by Koch, and

named by him *tuberculin.* Opinions regarding the virtue of tuberculin, still vary between the extremes. Clinicians, in general, are dissatisfied with the results, while the pure experimentalists in the laboratory continue to observe direct effects. Tuberculin is known to be a product of the growth of the tubercle bacillus in a culture soil of veal broth containing one per cent. of peptone and five per cent. of glycerin. It is extracted with from 40 to 50 per cent. glycerin, so that it keeps indefinitely.

As a therapeutic agent, the value of tuberculin may now be definitely accepted. Its use is contraindicated in the presence of fever and hemorrhage, and in serious affections of the intestine—conditions due to sepsis, and best controlled by creosote and cognac. Tuberculin can be used in only pure tuberculous cases. It is therefore of especial value in incipient cases of disease of the lungs, before sepsis has set in, and in deep-seated or latent tuberculosis of glands or bone. Cases of anemia, amenorrhœa, cold, bronchial catarrh, recurrent or obstinate laryngitis or other of the multiform manifestations of tuberculosis, whose real nature was only disclosed perhaps by a diagnostic dose (1 milligram, 1 per cent. solution) of tuberculin, gradually yield under the continued and judicious use of the remedy. The initial dose should be small (from 0.00005 to 0.00001 grams) and should be gradually increased (avoiding fever) slowly, at first, more rapidly later, up to 0.1 grain. In animals, the injection of tuberculin always suffices to disclose tuberculosis when present, so that the remedy is relied upon absolutely in the examination of cattle.

A few words about creosote. Perhaps of all the remedies recommended in pulmonary tuberculosis, the only one that holds its place and continues to grow in favor of clinicians, is creosote. Although the mode of action of creosote has not been determined, there is no doubt about the clinical value of the remedy. In this connection, Sommerbrodt cites the statement of Kirchoff, that when theory and practice do not agree, practice is always right.

Weiss observed, in his cases, increased weight, decrease of cough, and increase of appetite. The appetite may become ravenous, and this change is observed, not only in cases of slight involvement of the apices, but also in those in which the disease is advanced. Cases marked by absence of fever, with more or less complete anorexia, are the most benefited, but creosote often exercises a good effect even in the latest course of the disease and in the presence of intermittent fever. When it actually interferes with the appetite, it should be withheld at once and the remedy is contraindicated, when there is diarrhœa or disease of the kidneys.

In passing, it may be well to mention that guaiacol, the volatile essences and sams, and ichthyol have all been less successful than creosote.

(3) Cinnamic acid has been used as an intravenous injection. The merit of having first employed cinnamic acid in the treatment of pulmonary tuberculosis belongs undoubtedly to Landerer, who set himself to work to introduce artificial processes that should imitate those of the natural cure; that is, the conversion of a tissue poor in blood vessels and showing a tendency to caseation into a tissue rich in blood vessels, with a tendency to the formation of granulations and scar tissue. This treatment has not been found practicable.

Open-air treatment.—The so-called

open air treatment of pulmonary tuberculosis has been carried out and recommended recently by Beer, Dettweiler and others, especially in sanatoria, as by Brehmer, at Goerbersdorf, Silesia; by Dettweiler, at Falkenstein; by Tarbau, at Davas, Upper Engadine; by Sabourin at Vernet, Oriental Pyrenees; by Lauth, at Lausanne, Switzerland; by Trudeau, at Saranac Lake, New York. It is the established treatment of tuberculosis at the present day and is most completely exhibited in the sanatoria. In a word, it consists in affording the patient pure outdoor air to breath, continuously, both day and night, keeping him out of doors by day and having his bedroom windows open by night, or in many cases having him sleep also out of doors. It seems hardly necessary to add that at the same time due attention should be paid to diet, rest, hydrotherapy, and to all that pertains to the hygienic well being of the patient; hence, this method is also, and perhaps more correctly, termed the hygienic-dietetic treatment. This treatment has been brought to such a degree of perfection that it may almost be said to be independent of climate; that is, it can be successfully carried out wherever there are pure air, freedom from dust, protection from wind, and a moderate amount of sunshine —climatic conditions which are obtainable everywhere, outside of large centers of population.

It seems a very simple matter to conduct such a treatment, but experience has shown that a constant supervision is necessary, in order to keep the patient up, day after day, summer and winter, to this treatment in all its strenuousness; hence the great value of sanatoria and their constant and rapid increase in number. Even though this treatment is in a measure independent of climate, it is not to be asserted that all climates are equally valuable, for it is obvious that the greater the number of favoring climatic elements, the more perfectly the treatment can be conducted, and the more successful it will be. Hence, such resorts as Daras, Colorado Springs, Idylwild (California) Asheville, Aiken, and many others of superior climatic excellence are especially favorable for this mode of treatment, provided the other essential factors, such as diet, etc., are at hand.

The conditions of the high and dry climates are best met in our country on the elevated plateaus of Colorado and New Mexico, especially at Glenwood Springs, Colorado Springs, Manitou Springs, Santa Fe, etc. The conditions of moderate elevations, with pure atmosphere, are found in Asheville, N. C., Aiken, S. C., the Adirondack Mountains; while the soft, soothing influences of a balmy atmosphere are provided in Lower California, and especially in the Bermudas and the Bahamas, as at Nassau. Florida is too moist and the air too still for tuberculous patients. It may be thought that this treatment can be accomplished by simply instructing the patient to keep out of doors. Nothing could be more fallacious than this. In the first place, the patient will not keep out of doors all day of his own volition. If he is out for a few hours each day, he is prone to think that he is fufilling his instructions. Further, he is often left to himself to determine whether he shall remain at rest or take exercise, while in the open; generally he does the latter, sometimes from ignorance, sometimes for want of any proper place where he can remain at rest. Here again comes in the value of a sanatorium

where all these details are carefully looked after.

The theory of the outdoor treatment is, of course, evident; the object is so to improve the nutrition of the pulmonary tissue and general system, and so to harden the patient and thereby increase his resisting power that he will no longer present a favorable soil for the tubercle bacillus.

Are all cases of pulmonary tuberculosis suitable for the open air treatment? Obviously not, for all cases are not susceptible of an arrest or improvement; and the object of the treatment is to cure. Although it is difficult, if not impossible, in many cases and in the various stages of the disease, to form a probable prognosis, still, in general, it may be said that advanced cases with mixed infection and septic symptoms—cases of very extensive disease, those in which the tuberculous process is accompanied by acute symptoms, or those in which the recuperative power seems to be lacking, and the whole system appears to have collapsed, are unfavorable cases and unfitted for the severe regime of the open-air treatment. Fresh air, of course, should be afforded all cases, as to everybody else, sick or well; but this can be done in a well ventilated room, where the patient is made comfortable and kept at rest. If some of these apparently hopeless cases later exhibit more favorable symptoms and develop greater recuperative powers, they then can be more properly subjected to the open air treatment.

Individualization of patients is the keynote of successful treatment of tuberculosis; in nothing is this so manifest as in the selection of the climate or resort to which individuals should be sent.

For sake of convenience one author, Solly, divides his cases into three classes: tuberculous, pneumonic, and catarrhal. Purely tuberculous cases, catarrhal cases, or those combining these two characteristics, do better in cold, dry climates, while for the pneumonic cases a warm, dry climate is preferable. As a majority of cases met with present the dual character of tuberculous and catarrhal, it may be stated that, in general, curable or arrestable cases do better in a cold, bracing climate, at a moderate elevation of two or three thousand feet above sea level. Again, we often meet patients in whom certain organic heart lesions contraindicate residence at a high altitude or those whose disease is complicated by diabetes, indicating the necessity of moderately high elevation. The more incipient the tuberculosis, the more pure is its tuberculous character, and such cases are better adapted to a high altitude.

Having selected the locality in which it is hoped to effect a cure, it is imperative to impress upon him the necessity of remaining continuously there until the desired end is accomplished. It is difficult for patients to realize the danger they incur by short visits to their homes or lowered altitudes.

It may be pertinently asked if patients do not catch colds under this constant open air exposure. On the contrary, experience has proved that they are less likely to the consequent unavoidable exposure to impure air. The constant exposure to pure germless air, however cold, where one is properly clad, does not render one susceptible "to catching cold," as Nansen so strikingly proved on his Arctic expedition.

In conclusion, it is well to reiterate that the open air treatment is not the whole treatment of pulmonary tuberculosis. In addition, there must be an abundance of nutritious and properly prepared food; rest; a most careful avoidance of overexertion, either mental or physical; moderate exercise, under careful supervision, and in suitable cases; and due attention to the skin by use of various hydrotherapeutic measures, conducive to the invigoration of the general system, must be adopted.

The Journal of the Michigan State Medical Society

All communications relative to exchanges, books for review, manuscripts, advertising and subscriptions should be addressed to Editor B. R. Schenck, 502 Washington Arcade, Detroit, Mich.

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Editorial

With the March issue of the JOURNAL, a new editorial staff assumes charge. It is the desire of the editor and each of the collaborators to make the JOURNAL as interesting to the members of the State Society as is possible.

In filling the pages each month, we shall have two objects constantly before us—first, to make the JOURNAL attractive, so that it will be read, and second, to make it just as scientific as will appeal to the majority of the readers. Above all, we want to make it dignified and a true index of Michigan medicine. These objects can be attained only by the hearty support of every member of the State Society. The JOURNAL belongs to you and the editorial staff invites suggestions and honest criticisms.

It will continue to be the policy of the JOURNAL to keep in close touch with the county societies and the secretaries are earnestly requested to send in papers, abstracts and news items, avoiding as far as possible, mere programs of meetings.

We shall endeavor to present to the members the reports of the State Board of Registration, the State Board of Health and the medical matters which may come up before the State Legislature.

The general make up of the JOURNAL will continue as before, but a slight change in the section on medical progress will be made. Abstracts will appear monthly in medicine, surgery, gynecology and obstetrics, pathology and bacteriology, and therapeutics. Neurology will alternate with pediatrics, laryngology with opthalmology and syphilis and dermatology with genito-urinary surgery. Reports in actinotherapy, orthopedic surgery and otology will appear every three months. In this way, it is hoped to briefly cover the new work in all departments of medicine, without making any one issue unduly large. In so far as possible, abstracts will be made of articles appearing in journals having the smallest circulation in Michigan, so that the reading matter may not be an old story.

A NOTABLE ADDRESS ON RECENT PHASES OF IMMUNOLOGY

A task of unusual difficulty, most excellently executed, was that of Professor Hektoen in his address to the Wayne County Medical Society last month. Even under the author's attractive title, "Immunity in Theory, Experiment and Practice," the topic presented embarrassing features, since it was necessary to seek a comparatively elementary plane of introduction for those not intimately in touch with this line of investigation, to avoid tedious repetition of general aspects ably presented in the lectures of Ehrlich, Prudden, and Welch, and still to supply an intelligent preface for the later developments of immunology. The universally favorable comments by the physicians composing the large audience which greeted the lecturer, bear witness to this successful solution of the problem.

Indeed, the address and its accompanying projection exhibition of beautiful microphotographs, based on Professor Hektoen's original and unpublished work, constituted a conspicuous event in the scientific medicine of Detroit. With the abridgement reluctantly made to meet the author's wishes concerning those portions of the address dealing with previously discussed topics, an abstract is presented in this number of the JOURNAL.

Coming with the authority of one widely recognized as a teacher and investigator whose laboratory is the clearing-house for much meritorious work in the fertile field of immunity, the emphasis laid on the theory of opsonins, as elaborated by Wright and Douglas, and on the promise of practical therapeutic results through the agency of bacterial vaccines, must be recognized as of weighty significance. Behind his conservative expressions, it is evident that Professor Hektoen looks with enthusiastic hopefulness to this most recently exploited phase of immunity which seems destined to application for those pathogenic bacteria, belonging to the large class not producing soluble toxines and not stimulating the production of antitoxins, including the pyogenic staphylococci, streptococci, pneumococci, and the organisms of cholera, typhoid, dysentery, and plague. Especially keen interest attaches to Wright's experiments with tuberculin (tuberculosis vaccine), and to the apparently similar principle underlying the procedure in Behring's widely-heralded treatment for tuberculosis. On the theory of opsonic action the good effects of these vaccines are ascribed to the production of "opsonin," specific for the organism used in inoculation, the opsonin preparing the microbe for destruction through the agency of leucocytic phagocytes. Even in the face of existing infection, it appears possible to stimulate the latent opsonic power of the blood and thus to assure, advance, or hasten the process of recovery.

THE DECLINE OF FOOT BALL

A game for which constant training is essential and in which so many severe injuries are received, is of interest to the medical man, even though he may not be interested in the game *per se*. The decree went forth from Harvard a few weeks ago that there shall be no more football until the game has been reformed to the satisfaction of the board of overseers. Since then, there has been much agitation on the subject in nearly every institution of learning in the country.

This action on the part of the Harvard authorities, though anticipated, was precipitated by the report of Doctors Nicholls and Smith, recently published in the *Boston Medical and Surgical Journal*. The report covers injuries received during but one season and at but one university, yet it is appalling.

At the beginning of the season, the squad numbered 150 but it was soon reduced to about 70 men. Of injuries received, there were 145; among them cuts, requiring stitches, 12; injury to back 12; fractured rib 5; fracture of zygoma 2; broken nose 7; fracture of brim of the pelvis 4; concussion of the brain 19; cerebral hemorrhage 1. Injuries resulted in the loss of 175 days of recitations and lectures. These figures are but a few of the long list given. The authors conclude that football causes more injuries than any other game and that the number of injured players is much greater

than the public or even the students surmise.

A still more interesting and we believe more important conclusion reached is that the game does not, as is generally supposed (at least by its advocates), develop the best type of man, but on the contrary, men whose sluggish nerves have little sensibility to pain, a reversion toward the savage type. Certain it is that the worship of brute force and the commercial spirit have increased, within the past few years, to an appalling extent.

As was pointed out by a speaker at a recent dinner, "the commercial spirit in sport at college means the fostering of the commercial standards which create bosses and insurance scandals."

Had reports similar to that of Doctors Nicolls and Smith been made public before, the death knell of football would have been sounded years ago.

The assistance and co-operation of all physicians, and especially all the members of our State Society, are desired by those in charge of the work of compiling the new American Medical Directory. This directory will be different from any heretofore issued, in that it will contain only the names of legally qualified physicians, and will contain no data that has not been verified from the original authorities. If you have not sent in your information, write at once to the American Medical Association for a blank form.

The Committee on Scientific Work held a meeting on January 12th. The program for the Jackson meeting was outlined and a call issued for voluntary papers. It is hoped that there will be a generous response. The local committee of arrangements is an enthusiastic one and there is every promise of a most successful meeting. Jackson is centrally located, easy of access and with the fine entertainment which is promised, the attendance should be large.

Book Notices.

A Compend of Histology. By Henry Erdmann Radasch, M. S., M. D., Associate in Histology and Embryology in the Jefferson Medical College; formerly Fellow in Chemistry in the University of Iowa; etc. Cloth; 5x7 in.; ninety-eight illustrations. Price, $1.00 net. Philadelphia: P. Blakiston's Son & Co., 1905.

The last to appear of the well and favorably known quiz compends, bound in brown cloth, which are issued by Blakiston, is Radash's Histology. It is also one of the best. The little book opens with a very valuable section on the technic of preparing sections for histological study, the various formulae of fixing and staining fluids being given and points in their use fully explained. One point in this section which appeals to the reader is the statement of the reason for each step. For example, in the description of the slide technic of staining,—step 12—"cover with a drop or two of creosote for five minutes. This removes the alcohol, renders the specimen transparent and allows the use of balsam"—the why and wherefore of each point makes the whole more intelligible and interesting than is usual in such a book.

The cell types and various tissues are then reviewed systematically, after which brief but readable descriptions are given of the microscopic structure of the various organs.

The whole subject has been brought up to date and the text is well illustrated, about one half of the cuts being new.

Koplik; Diseases of Infancy and Childhood. A Treatise on the Diseases of Infancy and Childhood. For Students and Physicians. By Henry Koplik, M. D., Pediatrist to Mt. Sinai Hospital, Ex-President American Pediatric Society, etc., New York. New (2d) Edition. Revised and Enlarged in Text and Illustrations. Octavo, 868 pages, 184 engravings and 33 plates. Cloth, $5.00; Leather, $6.00 net. Lea Brothers & Co., Publishers, Philadelphia and New York, 1905.

The first edition of Koplik's work on Diseases of Children proved so acceptable that it was soon exhausted, making a second edition necessary. This has just appeared. There are nearly 200 more pages in this present volume, as well as a number of new engravings from original drawings, showing characteristic conditions.

In the preface, the author says that the literature of pediatrics unfortunately abounds in matter which is theoretical and impracticable and that such matter has been carefully avoided in the book, as it is out of place in a treatise designed for the student and practitioner.

Section 1 contains much interesting matter on the normal infant and child, on methods of examination, on management and hygiene, and on drugs and other methods of therapy. A few interesting quotations may be cited, "There is absolutely no unvarying picture of a normal child, there are limits of variation and these the physician should endeavor to master." In making the examination, "the patient should be completely undressed. This is done as a routine procedure, even in cases of apparently mild illness. Any eruption on the skin is thus forced upon the attention of the physician." "It will be seen from what I have said that I do not believe in the so-called hardening process as applied to children." "Rocking bassinets or cribs are undesirable. An infant accustomed to such a rocking-crib or cradle will not fall asleep unless rocked, and the mother or nurse becomes a slave to the crib."

Section 2, devoted to feeding, is one of the most valuable in the book. The author has given the methods employed by him during twenty years, the experience being gained from a large ambulatory and hospital practice. He says, "though great advances have been made in the past decade, we cannot say that the art of applying certain principles of nutrition to the feeding of infants has attained its highest perfection." To a certain extent the subject is empirical, but it is becoming less so and the "vast majority of children can be fed according to principles well established and laid out at the disposal of the general practitioner." This subject in all its phases, is fully considered, such topics as milk analysis, proprietary foods, maternal nursing, wet nurses, mixed feeding, etc., receiving minute attention. The portion devoted to the household modification of milk is particularly good. Koplik says that if carefully carried out, it can, "boast of just as brilliant results as the laboratory methods." Valuable tables are given.

The next seventy pages deal with the diseases of the new born.

Scarlet fever, measles and typhoid are thoroughly covered. Meningitis and diphtheria are well described and illustrated. Diseases of the digestive, circulatory, respiratory and nervous systems are fully covered. Lack of space forbids a more detailed account of these chapters.

The index is complete. Altogether the book is an excellent one, for the author's style is entertaining and readable. It is a particularly valuable book for a practioner who is called upon to feed infants artificially and has not a Walker-Gorden laboratory near at hand.

BOOKS RECEIVED.

A Compend of Histology, by H. E. Radash, M. S., M. D. Blakiston's Quiz Compends, P. Blakiston's Son and Co., Philadelphia, Pa. 1905.

Proceedings of the Connecticut State Medical Society. Published by the Society, W. R. Steiner, Editor. Bridgeport, 1905.

Transactions of the Indiana State Medical Association, 1905. Published by the Association, Indianapolis, 1905.

Koplik, Diseases of Infancy and Childhood. New (second) edition. Lea Bros. & Co., Philadelphia and New York.

The Practice of Medicine, a Text-Book for Practitioners and Students with Special Reference to Diagnosis and Treatment. By James Tyson, M. D., Professor of Medicine in the University of Pennsylvania, etc. Fourth Edition; revised and enlarged. 240 illustrations. Philadelphia, P. Blakiston's Son & Co. Price $5.50. (Full notice next month).

Fractures of the Head of the Radius. An Experimental Study and Report of Cases, by T. Turner Thomas, M. D., University of Pennsylvania Medical Bulletin.

Reports

January Meeting of the Legislative Council, A. M. A.

FLEMMING CARROW,

Michigan Member of the National Council. Detroit.

As the Michigan member of the National Legislative Council of the American Medical Association, I have been asked to give a condensed report of an important meeting held in Washington during the month of January.

The matters considered are of great importance to the public welfare, and as a final settlement of most of them is pending before both houses of our National Legislature, it seems urgent that every member of the profession should acquaint himself with the various bills affecting the public service and the public health, in order that each may use his personal influence with his Senator or Representative toward a successful issue of the bills in debate. The Chairman of the Council, Dr. Charles A. L. Reed, presented an address, notable for its masterly treatment of the questions at issue, and his recommendations are most admirably conceived and forcibly argued.

The Army Medical Reorganization Bill is designed to correct glaring defects as to personel, promotion-rank effectiveness, and definite authority in the medical service of our army.

As at present constituted, the increase of the Medical corps as allowed by Congress, has not been in fair proportion to the increase of the army itself. Unjust discrimination against the medical service has resulted in the resignation of many of our army surgeons, and in an inability to recruit the ranks thus depleted by desirable applicants. The bill also provides for the creation of a Medical Reserve Corps from which recruits to the regular service may be made in case of war, and the giving to members of this corps positive and respectable military rank befitting members of a learned profession.

The Pure Food and Drug Bill received careful consideration at the hands of the Council. This bill was passed in the House of the 57th Congress and was approved by the Senate Committee on Manufactures, but was never considered by the Senate itself. Senator Heyburn has been greatly interested in this bill and has worked most industriously for its passage, but a lively antagonism on the part of the manufacturers of adulterated foods and medicines, secured defeat of its consideration before the Senate. We should all feel a personal interest in this measure, as physicians, because we know the disastrous effects of worthless and impure foods and drugs upon the public, a public unable and not disposed to look closely into a matter upon which it is disqualified to judge.

That there should be three or more distinct qualities of drugs sold, one to the rich and another to the middle classes, while a third is dispensed to eleemosynary institutions and practitioners in the country, is revolting to our sense of fairness and repugnant to common decency.

Continuing, Dr. Reed reports upon the measure for a national incorporation of the American Medical Association. Our national body does business under a charter issued by the State of Illinois and it was thought that we should have a charter enabling us to transact business in any or all of the states of the Union. After conflicting reports by various committees as to the advisability of a National Charter of incorporation—and since there seemed a disinclination on the part of the Senate to provide a bill giving power for such a charter—the whole matter has been referred back to the American Medical Association with the opinion, that since our corporate and business interests are in Illinois, that it is just as well to continue our business under the charter of that state.

There are a number of bills before the Houses of Congress affecting the public health, which are local in their application. These were all considered in Dr. Reed's thorough report—such, for instance, as *An Amendment to the Lunacy Laws of the District of Columbia—A Law Regulating Inebriates in the same District—The Regulation of Medical Practice in the Government Reservation at Hot Springs, Arkansas—and a Department of Public Health with Representation in the President's Cabinet.*

The report to the Council also called attention to the crusade against nostrums now being so ably waged by the editors of *The Ladies' Home Journal,* and *Collier's Weekly.* The co-operation of the profession is asked, and resolutions are to be presented to the forthcoming meeting of the American Medical Association, requesting that body to empower the National Legislative Council, through a committee, to bring to bear upon the subject the influence of the profession—the various State Legislatures, and Congress, in passing uniform laws, demanding that all patent and proprietary medicines shall have an exact formula of their contents printed on each package. Thus a crusade of education is to be instituted which it is hoped may result in limiting the sale of nostrums.

The report of a committee recommending the restoration of the canteen in the army was adopted, and a suitable draft of a resolution to be presented to Congress in this regard was passed as the opinion of the Council. A most praiseworthy memorial is to be presented to Congress, asking that suitable recognition be made of the services of Dr. James Carroll, a member of the Yellow Fever Commission, who allowed himself to be bitten by a mosquito, infected with yellow fever. Dr. Carroll suffered an almost fatal attack of yellow fever and his case was the first experimentally produced, and in the judgment of the Council should receive

appropriate notice from the Government of the United States.

Several visits of courtesy were made—one upon the President, the Secretary of War, Secretary of Agriculture. Secretary of the Interior, and the various members of the houses of Congress interested in the passage of the bills which concern the public welfare and health. After which, the Council adjourned.

County Society News

CASS.

The Cass County Medical Society, at its annual meeting held in Cassopolis, December 28, 1905, elected the following officers for 1906:

President, Dr. E. A. Planck, Union; Vice-President, Dr. M. Holland, Cassopolis; Secretary and Treasurer, Dr. W. C. McCutcheon, Cassopolis. Delegate to the state meeting at Jackson, Dr. J. H. Jones, Dowagiac; with Dr. E. A. Planck, Union, as alternate.

The program of the meeting was as follows: Small-pox, Diagnosis and Treatment, Dr. W. C. Ketcham, Dowagiac. Diagnosis of Typhoid Fever, Dr. E. A. Planck, Union. Echinacea as a Local Dressing in Phlegmons, Dr. W. C. McCutcheon, Cassopolis.

The retiring president then delivered the annual address, extracts from which follow.

W. C. McCUTCHEON, Sec'y.

Abstract of address delivered by Dr. J. H. Jones, retiring President of the Cass County Medical Society.

The march of progress is marked by change. New light is ever dawning, and discovery is the natural order. Such is the history of progress. That the science of medicine has kept pace in the front rank with the other sciences, I contend. That its influence in upbuilding and uplifting humanity is pre-eminent, cannot be denied. Medical science has shorn pestilence of its power, and converted hot beds of disease into conservatories of health. The researcher in the laboratory and the practitioner in the field, work hand in hand for the advancement of medicine. There is no effort of science which may not be exceeded; no depth of research which may not be deeper sounded; no flight of investigation which may not be surpassed. The future holds in trust rewards for earnest work. It is not my object to enter into a review of what medical science has accomplished. So great has been the work, that justly deserved public confidence has been established. On this high tide of success ride human parasites that prey upon the public under the insignia of our profession. This is an age of greed and graft, and the legitimate field of the medical profession has been invaded by mercenary hordes who are plundering the people. Under the guise of benefactors of the race, they execute their nefarious work. I refer particularly to the co-called patent medicine manufacturers. By an ingenious system of advertising, they depict the common phenomena of fatigue as signs of oncoming sickness, forewarnings of impending disease, and point to their remedy as the only refuge, substantiated by worthless testimonials, which, to the credulous reader, are undisputed evidence. The printing press is a great power, and they use it to win their victories. Take up any periodical, and the eye cannot escape the advertiser's ingenuity, the plea for the sick to become healed, and the well to keep well by the liberal use of their never-failing (?) remedies. When life is the reward of labor, men are apt to be industrious. When men are led to believe that disease may be checked or diverted by some cure-all, they purchase freely. The advertiser plays upon the fear of the reader by a series of meaningless symptoms, and self diagnosing, and self prescribing are the results.

We are told that the American people like to be humbugged, but my observation proves to the contrary. We all know that the American people want an honest deal, and resent any fraud when once discovered. They become such easy victims on account of their unlimited credulity. When Doctors of Divinity and other men, held high in public esteem, lend their influence by portrait and testimony to further such frauds, we may excuse them. But when men, bearing the degree of Doctor of Medicine, aid and abet such work, there is no excuse. It is a sad example of diverted influence. So persistent and far-reaching is the working of these frauds that they sometimes invade the dispensary of the physician. The medical press is made an instrument to herald the false claims of the manufacturer. Medical men sometimes compromise themselves, and reproach the profession by attesting to the virtues of worthless mixtures. The medical profession should demand that their journals be cleansed from the taint of questionable advertisers. Many so-called ethical prepartions are advertised to the laity as well as to the profession. An endless stream of gratuitous literature floods the doctor's table vaunting the value of worthless nostrums. Harmful and dangerous drugs are thrown daily at our doors, a little bait to catch the unwary. These frauds are a menace to the people. Laws should be enacted to pro-

hibit them. We have pure food laws and food inspection, and it is of equal importance that we have laws to control these gigantic frauds. The medical fraternity should work as a unit, and through the county, state and national associations influence legislation for the good of humanity.

Series of articles have appeared the present year in the *Ladies' Home Journal* and *Collier's Weekly* exposing these frauds. These articles are worthy the perusal of every individual, and the publishers deserve the hearty support of the medical fraternity. It is the duty of the physician to maintain the dignity and honor of his profession. There is no profession in which so much good may be accomplished. There is no profession in which so much evil may be wrought. There is no profession which comes so near to the heart of humanity. What confidences are ours, and with what fidelity do we hold that sacred trust! The true physician does his duty in the light of conscience, feeling that there is no nobler mission than duty, no truer guide than conscience. Many people deplore the rarity of Christian charity. If any one wishes to see charitable work exemplified, look to the record of the medical profession. There is no one under the sun who does so much for charity as the physician. He often wraps the draperies of his couch about him with no other compensation than the satisfaction of a service rendered to humanity. We are engaged in a great work. There is no calling with nobler aims, no vocation with greater responsibilities. We must stand together. We need the strength which comes from unity, the power which results from co-operation. We need each other's aid in our heroic work of alleviating suffering, and prolonging human life.

CHIPPEWA.

The fourth annual meeting of the Chippewa County Medical Society was held at the Park Hotel, Sault Ste. Marie, on December 5, 1905. The following officers for 1906 were elected: President, Dr. Robert Bennie, Sault Ste. Marie; Vice President, Dr. C. A. Person, Sault Ste. Marie; Secretary, Dr. A. H. Miller, Sault Ste. Marie; Treasurer, Dr. P. B. LeBlanc, Sault Ste. Marie.

A. H. Miller, Sec'y.

DELTA.

At the last meeting of the society, the following resolution was adopted:

"*Resolved*, That, we, the members of the Delta County Medical Society, vigorously protest against the registration of births, by physicians, without compensation."

H. W. Long, Sec'y.

EATON.

The Eaton County Medical Society held its regular meeting at Grand Ledge, on January 25. Dr. Hal. C. Wyman, of Detroit, read a paper on "Appendicitis: How to Differentiate Between Medical and Surgical Cases." Dr. P. H. Quick, of Olivet, read a paper on "Ancient and Modern Medicine." The next regular meeting of the Society will be held at Vermontville, in April.

W. H. Enders, Sec'y.

EMMET.

At the annual meeting of the Emmet County Medical Society, held January 17, 1906, Dr. G. W. Nihart was elected President, and Dr. G. E. Reycraft, Secretary-Treasurer, for the ensuing year.

GENESEE.

The meeting held January 23, 1906, was attended by about 20 members.

Dr. J. N. Buckham, of Flint, was elected delegate to the State Society meeting in Jackson. Dr. E. D. Rice, of Flint, was elected alternate.

Dr. H. D. Knapp, of Linden, Dr. R. G. James, of Gaines, Dr. J. H. Houghton, of Flushing, and Dr. C. L. Scoutten, of Clio, were elected to membership.

The Genesee County Medical Society voted to invite the Sixth District to hold their meeting here in the summer, when Dr. MacCormack will be in the state, and have him present.

Dr. Reuben Peterson, of Ann Arbor, gave a talk on his operation for shortening the round ligaments and illustrated it by lantern slide demonstrations of the various steps. The paper was discussed by Doctors Murray, Rice and Goodfellow.

At 5 P. M., a banquet was held in the Dryden Cafe and after this the meeting listened to a paper by Dr. Tupper, of Flint, on "Labor." This paper brought out a very free discussion.

J. G. R. Manwaring, Sec'y.

INGHAM.

The mid-winter meeting of the Ingham County Medical Society was held on January 11, at Lansing. President Hagadorn was in the chair. Fifteen members and six visitors were present. Dr. J. F. Campbell was elected dele-

gate to the State meeting. Dr. S. H. Culver was elected alternate. Committees for the year were announced as follows:

Legislation—O. H. Freeland, F. A. Jones, C. H. Brucker.

Public Health—F. D. Shumway, R. E. Miller, F. E. Thomas.

Program—J. D. Hagadorn, G. B. Wade, O. H. Freeland, O. H. Bruegel, L. Anna Ballard.

Dr. Clara M. Davis was elected to membership.

Prof. C. E. Marshall of the Michigan Agriculture College gave an interesting address upon, "Milk, Bacteria," with chart illustrations. Dr. Frank Shumway, secretary of the State Board of Health, read a paper upon "Health Officers, their Duties and Responsibilities". (These papers will appear in full, in the JOURNAL.)

The following resolution was presented by Dr. J. F. Campbell and adopted by the society:

WHEREAS:—We, the Ingham County Medical Society, assembled in regular session on January 11, 1906, believing that in the interests of public health, and as a further aid to the profession of the State that there should be a Chemical and Bacteriological department under the direction of the State Board of Health at Lansing, therefore,

Resolved, that all honorable means shall be employed by members of this society to further the passage of an act by the Legislature creating this department and providing by appropriation for its equipment and maintenance.

Dr. B. Nottingham, health officer of the city of Lansing, presented a paper favoring the establishment of a State department on Bacteriology, also for medical examination of pupils in schools, and in support of the State Board of Health in including pneumonia and tuberculosis among the contagious diseases dangerous to the public.

L. ANNA BALLARD, Sec'y.

MONTCALM.

Montcalm Medical Society held a fine meeting at Sheridan, on January 11, 1906, and was well entertained by the local fraternity of that place.

Dr. W. P. Gamber, of Stanton, was elected delegate to the Jackson meeting, and Dr. D. K. Black, of Greenville, alternate.

Dr. F. A. Johnson read a paper on "The Treatment of Pulmonary Tuberculosis," which was well received. (Printed in full in the current number of the JOURNAL.)

Upon motion of W. P. Gamber, the following resolutions were unanimously adopted.

H. L. BOWER, Sec'y.

Resolved, That the Montcalm County Medical Society expresses its hearty approval of the action of the American Medical Association in establishing the Council of Pharmacy and Chemistry and indorses their work of investigating non-official drugs and medicinal preparations, and heartily commends the good work of the Journal of the American Medical Association in its campaign of educating the medical profession concerning the evils of secret nostrums and urges it to continue in the good work.

Resolved, That the members of the Montcalm County Medical Society, as physicians, have the right to know the composition of all drugs used by them, and it is their duty to refrain from using such articles as do not contain on the label attached, the ingredients of which they are composed.

Resolved, That this society extends its heartiest thanks and earnest commendations to *Collier's Weekly* and the *Ladies' Home Journal* in their vigorous campaign against this great "American Fraud,"—exposing the fraudulent methods used by these venders of "Patent Medicines," and for the efficient manner in which they have shown the evil effects of these secret nostrums, and urge their continuance of this splendid work.

Resolved, That copies of these resolutions be sent to the editors of the Journal of the American Medical Association, the Journal of the Michigan State Medical Society, Collier's Weekly and the Ladies' Home Journal.

WAYNE.

General Meeting, January 15, 1906. Dr. Ludwig Hektoen, Chicago, delivered an address: "Immunity in Theory, Experiment and Practice," an abstract of which appears in the current issue of the JOURNAL.

The address was illustrated by microphotographic lantern slides.

Dr. David Inglis: Does modern investigation explain remote results of infections, as permanent acquired immunity, and parasyphilitic lesions?

Dr. Hektoen: Once-immune animals reacquire active immunity by inoculation with an amount of the particular antigen so small as to affect practically not at all, animals that have never been immunized. The cells of the once-immune animal are probably more readily stimulated to production of antibodies. Apparently permanent, acquired immunity may thus be explained as readily renewable immunity. Modern investiga-

tion does not yet throw light on parasyphilitic lesions.

A unanimous vote of thanks was extended to Doctor Hektoen, and an informal reception and smoker held.

Meeting of Surgical Section, Jan. 22, 1906. Dr. L. E. Loucks exhibited two cases of undeformed union of the lower maxilla after fracture. One case had been wired through inside incision, and the other held by a special splint.

Dr. Arthur L. Worden exhibited for diagnosis a patient with a general, blotchy, wheal-like exanthem. Dr. H. R. Varney stated that the case did not resemble scabies, or "Cuban itch," which is probably the same as scabies; that, in the absence of any other evidence of syphilis, the case was to be regarded as a somewhat unusual urticaria; that the principle of treatment was to discover and remove the cause, and to lessen the dermal irritation. The patient had been strongly annointing himself with sulphur ointment, believing that the cause of the trouble was parasitic.

Dr. C. S. Oakman presented the paper: "A Discussion of Some Closed Fractures That are Amendable to Early Operative Treatment." This paper and the discussion of it will appear in full in the April issue of the JOURNAL.

General Meeting, Jan. 29, 1906. Dr. H. O. Walker exhibited the gross specimens from a pylorectomy for carcinoma, from a thyroidectomy for dyspnoea in exophthalmic goitre, and from a hysterectomy for a vascular malignant neoplasm.

Dr. Arnold Lorand, Carlsbad, Austria: Graves' disease and diabetes are closely related, and are more frequent than commonly believed. It has been proved by animal experimentation that hyperthyroidism alone can produce diabetes; thus excessive amount of meat, which tends to hyperthroidism, is to be avoided in diabetes.

Dr. David R. Clark, Dearborn, presented the paper: "Some of the Salient Features of Dementia Praecox." The gradual, progressive mental enfeeblement without special physical change—and this essentially characterizes dementia praecox—is likely to manifest itself by inattention, emotional loss, failure of good judgment, and impairment of will. Some of the symptoms therefore, will be stupor, mannerism, stereotyped actions, negitavism, automatic obedience, and catalepsy.

Dr. C. W. Hitchcock presented the paper:

"A CASE OF DEMENTIA PRAECOX OF MEDICO-LEGAL INTEREST.

It is often a nicety to determine that degree of mental impairment which shall exempt from punishment from crime. Responsibility of examiner is a grave one and his duty should be conscientiously and carefully performed.

This case is that of a man, 26 years of age, whose father presents an ill shapen (dolichocephalic) head, and who cannot read or write; whose mother is evidently much demented, apparently never above the plane of a (possibly) high-grade imbecile. One of her brothers (maternal uncle of prisoner) was an inmate of a German asylum. A brother of the prisoner died insane, a patient in the Michigan Asylum at Kalamazoo, a case of irritable dementia praecox.

The respondent presents a very narrow and high-arched palate. He has been a farmer and a fisherman and for nearly a year past had been a dairyman at the State Asylum for Insane Criminals, from which institution he was discharged, owing to certain eccentricities of speech and conduct, which had then been noted just prior to his discharge. The authorities there had not deemed him a dangerous person to be at large, and so had permitted him to take a train for Detroit. From there he apparently started at once for Monroe, but felt impelled to leave the car at Trenton. Here he proceeded to buy a revolver and cartridges, and made his way at once to the house of his godmother, a woman some 56 years of age. He entered the house, walked into her bed-room, deliberately shot her repeatedly as she lay in bed, then beat her with a chair, leaving the house by the door by which he had entered, and, going to a hotel, he slept all night. He returned to Detroit the next day and there sought a policeman, to whom he surrendered himself and confessed his crime.

He was examined by a commission appointed by the court to determine as to his sanity. It developed that this was only one of a number of purely impulsive minor acts of which he had been guilty during a period of some two weeks or so. He had given expression to rather vague ideas of persecution, having threatened to leave his work because of fancied differences with others, which had no foundation whatever in fact, had proposed marriage, just before leaving the institution, to a woman, with whom he was not specially acquainted, and had otherwise shown a state of mental confusion, although he had done his work faithfully right along.

Admitting his criminal act, he had expressed no adequate regret or repentance, could assign no motive to explain, other than that he felt *impelled* to leave the car at this point and to go to this house and kill this woman. He admits that he bore her no ill-will and had no

difference with her of any kind. He says: "Just seems as if I had to."

His act, evidently the result of an unsound mind, seems to have been one of those purely impulsive acts, which are frequently known in dementia praecox and the nature of the act, the prisoner's attitude thereto, his recently previous history indicating evident mental infeeblement, all seem to warrant the diagnosis of dementia praecox for the building of which his physical and mental heritage gave excellent ground. That it was an act, the direct offspring of his insanity and one for which he could not therefore be properly held responsible before the law, the commission which examined him was well satisfied, and so reported to the court, by whom he was committed to the institution where he had been so lately employed. (Author's abstract.)

Dr. J. E. Emerson: Typical cases of dementia praecox with all the reported symptoms are not found. The symptom-complex varies greatly, not only with the particular form, but also with the individual case. Diagnosis is arrived at by consideration of the case as a whole in light of its progress.

Dr. John Flintermann said that upon reconsideration he could not satisfy himself that the case reported should be classified as dementia praecox. Epilepsy and the resultant mental weakness were to be considered. On the whole, the case could not be classified in any of the forms of insanity. Diagnosis, where possible, however, is important, as it may forewarn against danger. In a case of melancholia, in which he had unavailingly advised restraint, the patient killed himself.

Dr. Arnold Lorand, Carlsbad, Austria: Experimental excision of the thyroid is followed by nerve degeneration and great somnolence. Clinically, mental deterioration is associated with those diseases in which the thyroid is affected, as in cretinism, myxoedema, Graves' disease, and the sleeping sickness. The blood of animals whose thyroids have been excised has been successfully used for insomnia. The relation of the ovaries, as well as the thyroid, to the mind is shown in pregnancy and katamenia.

Dr. Minta P. Kemp reported a series of fifteen or twenty cases in which the prognosis appeared to be good for recovery.

Dr. Clark: Epileptiform seizures, as in the case reported, are not uncommon in dementia praecox. Mental degeneration is mental disease; the demonstrative incidents constitute insanity. Dementia praecox as a mental disease is continuous; the periods of insanity are intermittent.

Dr. Hitchcock said that he was unwilling to let the case reported go unclassified, and that he believed that it conformed to the type of insanity known as dementia praecox.

The following delegates were appointed to represent the society at the next meeting of the State society:

Dr. W. S. Anderson, alternate Dr. D. M. Campbell.

Dr. P. M. Hickey, alternate Dr. M. V. Meddaugh.

Dr. L. J. Hirschman, alternate Dr. B. R. Hoyt.

Dr. Emil Amberg, alternate Dr. C. S. Oakman.

Dr. W. H. Hutchins, alternate Dr. W. E. Blodgett.

Dr. D. R. Clark, alternate Dr. J. E. Davis.

Dr. Louise R. Thompson, alternate Dr. Minta P. Kemp.

WM. E. BLODGETT.

Medical News

The Noble prizes for 1905 were awarded to: Philip Lesnard, Kiel, for researches on cathode rays; A. von Baeyer, Munich, for work in chemistry; Robert Koch, Berlin, for his recent work on the prevention and cure of tuberculosis; Henryk Sienkiewicz, for the lessons in patriotism, taught by his Polish historical novels; Baroness von Suttner, Vienna, for her labors in the cause of international peace.

These prizes are from the interest on a large sum donated by Alfred Noble, the inventor of dynamite, and are awarded yearly to those who have most helped humanity by scientific research, helpful literature and by the promotion of peace.

We clip the following from the Bulletin of Vital Statistics: The Department has had several communications recently, relative to the constitutionality of the law for the registration of births which went into effect January 1st, and for the benefit of all those interested, we publish the following opinion from Hon. Henry E. Chase, Deputy Attorney General, which fully explains itself:

December 21, 1905.

Hon. George A. Prescott,
Secretary of State,
Lansing, Michigan.

Dear Sir:—

Yours of the 19th, enclosing copies of letters from Drs. E. A. Hoyt, Orson Millard, J. Williams, Jr., Fred R. Belknap, G. M. Livingston, and

George C. Gordon, relative to Act No. 330 of the laws of 1903, received.

The question presented by the doctors seems to be the constitutionality of the law; contending that it does not provide compensation for physicians making certificates of births, and filing same, in accordance with the requirements of said act. That is not a constitutional objection. It violates no section of the constitution. The constitution of Michigan does not require that a law shall carry with it compensation for every service performed under and in accordance with it.

Yours respectfully,
(Signed) HENRY E. CHASE,
Deputy Attorney General.

A movement is on foot in Columbus for the establishment of a physicians' club and library in that city.

The death of Prof. Ernest Ziegler, the eminent pathologist at the University of Freiburg, occurred last month. Ziegler's Text Book of Pathology is known the world over.

A provision in the will of the late Mr. Yerkes, provides for the establishment of a large general hospital in the Bronx, New York. The fund was to be available only on the decease of Mrs. Yerkes, but it is understood that she will immediately proceed with the plans for the buildings.

According to the *Lancet-Clinic*, the 1907 meeting of the American Medical Association, may be held in Cincinnati.

The lay press have been circulating the rumor that Doctor Osler has resigned the Regius professorship of medicine and will return to Baltimore. Doctor Osler's visit to America this year was according to a prearranged plan and there is no foundation for the rumor.

The attendance at the Boston Tuberculosis exhibition, held in January, was 24,560. The value of the dissemination of knowledge by means of these exhibitions cannot be overestimated. *Why not one in Michigan?*

In 1903, *The Interstate Medical Journal*, published in St. Louis, began publishing an "Annual Progress Number." The January number contains 13 articles on the various branches, which reflect great credit on the authors and editor. Taken together, they make a brochure of 216 closely printed pages, which will well repay close study.

A bill has been introduced into the Iowa legislature providing that the containers of all patent medicines shall show the ingredients and their amounts present in the medicine. Such a measure, it is expected, will greatly reduce the sale of these nostrums.

A well attended meeting under the auspices of the Academy of Medicine, held in Detroit on February 7th, was addressed by Baron Takaki, of Tokio, who is in America to deliver the Cartwright Lectures before the Alumni Association of the College of Physicians and Surgeons, New York.

Takaki entered the Japanese Navy in 1872, and becoming interested in the large mortality and sick disability in the navy, caused by kaki, or beri-beri, as it is called in English, was sent by the Japanese government to England to make further studies. Here he remained for five years and returning, was able to practically stamp out the disease by certain dietary reforms.

Not the least interesting portion of his Detroit address was devoted to the description of the methods which were employed in the late war, by means of which the death rate from disease was but one fourth that from wounds. In every other war the figures have been reversed, four times as many men dying from disease as were killed in action.

Baron Takaki was Surgeon General of the Navy in the Japan-China war.

The Grand Rapids Anti-Tuberculosis Society held an enthusiastic meeting late in January. Distinct progress was shown in the effort to stamp out the disease in that city.

Among other things accomplished, has been the passage of the anti-spitting ordinance and the regulation requiring physicians to report cases of consumption. The society also aided in the passage of the appropriation made by the State Legislature for the establishment of a sanatorium. Since November, a visiting nurse has been employed in visiting the homes of tuberculosis patients, giving them instruction as to proper treatment and securing precautions for the protection of uninfected members of the family. One hundred ninety such visits had been made.

The Fifteenth International Congress of Medicine will be held, under the patronage of the King, at Lisbon, April 19 to 26. Any reader interested in the subject may obtain literature from the Secretary of the State Society.

A sanitary dairy has been established near Kalamazoo. It is designed to furnish pure milk for infant feeding.

The appropriation asked for by the Detroit Board of Health amounts to $52,371, an increase over that of 1905 of $7,500. It is desired to increase the efficiency of the medical inspection of school children and this is estimated to cost $4,200.

In a review of a recent book on Psychiatry by Paton, the *Johns Hopkins Hospital Bulletin* says:

"The one urgent need of the immediate future in American psychiatry is an institution, hitherto quite unknown on this side, but whose advatages Europe has long enjoyed, namely, the University Psychiatric Clinic. As the best example of the up-to-date insane hospital may be mentioned the new institution at Munich, completed last year, which is a type of the best fruits of modern intelligence in the construction and arrangement of clinics for the insane, for the most advantageous study and treatment of patients, and the purposes of clinical instruction. This institution has recently been the subject of an elaborate monograph by the director, Prof. Kraepelin (Barth, 1905, 2M) and was also briefly described by Paton in Science."

Shortly after this appeared, the new Psychopathic ward was opened at Ann Arbor and Michigan is to be congratulated on being the first state to establish such a clinic.

The objects which are to be attained have been stated by the originator of the movement, Dr. W. J. Herdman, as follows:

(1) To obtain more accurate knowledge as to the nature and causes of insanity. (2) To make clear the way for the removal of certain of these causes. (3) To effect cures in some cases that are now practically incurable. (4) To relieve the state of the burden of care and expense of those thus restored to health. (5) To stimulate and make more purposive the work of observation, investigation and treatment of all the patients in all of our hospitals for the insane. (6) To give to him and her who will first have the opportunity to see and treat cases of mental disorder a correct knowledge of its nature and so enable them—the family physicians—to render intelligent help at a time when treatment of the right kind is most beneficial. (7) And last, but by no means least, to create a correct public sentiment and belief with regard to all ailments which affect the mind and so educate the people as a whole to rational views both as to prevention of such diseases and the proper treatment of those so afflicted.

The provisions of the law may be thus briefly stated:

"Patients may be sent to the Psychopathic Ward either directly by the judge of probate by whom they are examined as to their sanity, or from any of the state asylums for the insane. Patients are to be thus sent when either the superintendent of such asylum or the probate judge shall be of the opinion that the condition of the patient's mind is caused by some malady or disease that under the treatment of a specialist might be cured and the patient restored to sanity. An inquiry by the judge of probate into the probable benefit by treatment in such Ward to any person brought before him for commitment to any state asylum for the insane, is made obligatory, and he is to have, if desirable, the assistance of three competent physicians.

When patients thus sent to the Psychopathic Ward shall recover, they shall be forthwith discharged. Should a patient fail to recover, then, upon certificate of the head of the department of nervous diseases of the hospital of the University, that such patient is insane, the patient shall be at once confined in such state asylum as the judge of probate shall designate, or shall be returned to the asylum from which he was transferred to the Psychopathic Ward.

The same provisions for county or state support apply as apply to patients confined in the state asylums. Patients supported by relatives or other private means, shall pay the regular charges fixed by the Regents for other patients in the hospital.

The accounts of the Ward are to be kept by the superintendent of the University hospital, to be sworn to, and filed with the treasurer of the University.

The Psychopathic Ward shall be under the general control of the University hospitals, and the superintendents of the various state asylums for the insane are made members of the clinical staff of the Psychopathic Ward.

Compensation to any physician, surgeon, or officer of the University for care or treatment of patients in the Ward, beyond that received from the Regents of the University, is prohibited.

The superintendent of the hospital must annually report to the Governor the cases treated in the Ward and the result of the treatment.

Relatives and friends of patients sent to the Ward are not prevented from choosing which school of medicine shall have charge of the patient's treatment.

A penalty is provided for neglect or infraction of the act."

Michigan Personals

Dr. Edward Huber of Iosco has taken the practice of Dr. Tillapaugh, of Plymouth. The latter expects to remove to New York.

Dr. Roger Morris, late first assistant in the medical clinic at Ann Arbor, has accepted a position on the medical staff of the Johns Hopkins Hospital, Baltimore.

Dr. R. W. McLain, of Allen, announces his retirement from practice.

Dr. A. F. Kingsley, formerly of Centerville, has removed to Battle Creek.

Dr. J. L. Remilliard, late of Iron Mountain, has removed to Beaver, Ill.

Dr. C. H. Merrill recently left Marshall for Philadelphia, where he has a position in the United States Marine Hospital Service.

Dr. A. H. Eber, of St. Clair, has entered the medical service of the army.

The address of Dr. B. D. Harison, Secretary of the State Board of Registration, is 303 Whitney Building, Detroit.

Several members of the faculty of the University of Michigan were honored by election to offices in the various academic and scientific associations which met throughout the country during the holidays. A partial list of these elections follows: Dr. J. Playfair McMurrich was elected president of the American Society of Naturalists and Affiliated Scientific Societies, and a member of the council of the Association of American Anatomists, at Ann Arbor, Dec. 29. Dr. Frederick G. Novy was elected a member of the council of the Society of American Bacteriologists, at Ann Arbor, Dec. 29. Dr. Victor C. Vaughan was elected a member of the council of the Society of American Bacteriologists, at Ann Arbor, Dec. 29.

New appointments on the staff of Harper Hospital are as follows: Dr. Max Ballin, consulting surgeon; Dr. Guy L. Kiefer, contagious disease department; Dr. Eugene Smith and Dr. Flemming Carrow, consulting ophthalmologists; Dr. E. L. Shurly, consulting laryngologist; Dr. B. R. Shurly and Dr. Willis S. Anderson, attending laryngologists; Dr. J. A. MacMillan and Dr. L. J. Hirschman, attending proctologists.

Changes on St. Mary's hospital staff, Detroit, include consulting gynecologist, Dr. N. W. Weber; consulting neurologist, Dr. David Inglis; consulting laryngologist, Dr. E. L. Shurly; attending surgeons, Dr. F. W. Robbins and Dr. Frank B. Walker; attending gynecologists, Dr. M. Brady, Dr. W. A. Repp and Dr. Theo. A. McGraw, Jr.; attending dermatologists, Dr. A. E. Carrier and Dr. A. P. Biddle; pathologist, Dr. E. H. Hayward.

Dr. R. A. Race of Adrian has taken the practice of Dr. M. B. Prentis of Hudson.

Dr. F. A. Shumway, Secretary of the State Board of Health, delivered an address at the annual meeting of the Michigan Engineering Society, held at St. Ignace, January 18. The sanitary aspects of municipal sewerage and water supply systems was chosen as the theme.

DEATHS.

Dr. Samuel P. Wooster, aged 76, the oldest physician in Grand Rapids, died on February 6. Doctor Wooster was born in New Haven, Conn., and came to Michigan shortly after his graduation.

IN MEMORIAM.

George Archie Stockwell died at Houston, Texas, January 28, 1906, of apoplexy.

He was born at Binghamton, N. Y., December 19, 1846, and came with his parents to Port Huron in 1851. He entered the U. S. Navy in 1865, being purser's steward on one of the monitors.

Doctor Stockwell graduated in medicine at the Albany Medical College in 1868 and after practicing a few years devoted himself to literary work on medicine and natural history. He traveled much and lived for a time with the Northwest Indian tribes, afterwards writing interestingly of their medicine men and religious mysteries. He was later called to the editorship of *Forest and Stream* and was for a time on the staff of the *Scientific American.*

For several years Doctor Stockwell was editor of the *Medical Age,* and for a short time of the *Detroit Medical Journal.* He was the author of many valuable and interesting articles, and as an author was clear, forceful and interesting.

He was a member of the national, state and district societies, of the New Sydenham Society of London, Eng., and was made a Fellow of the Zoological Society of Great Britain for his researches and writings in the field of natural history. He was a man of genial disposition, a gifted writer and a fine conversationist.

M. WILLSON.

Correspondence.

To the Editor of the Journal:

Page 124 of the Journal of the Michigan State Medical Society (February, 1906) contains some remarks in regard to the free treatment of the well-to-do at the university hospitals. It is entirely against my taste to enter again into the controversy in regard to the conditions mentioned. After a great many arguments have been considered, and after many opinions have been aired, many of these in the presence of the Board of Regents, it is my firm impression that the medical profession of the State of Michigan is right beyond a doubt. Anybody familiar with the subject knows that the matter has reached a stage in which a solution of the difficulty has been recognized as imperative. It is conceded by some that circumstances ask for forbearance in time and means. Most decidedly I cannot agree with the statements referred to on page 124. Remarks of that nature are liable to discredit the commendable work which has been done by the medical profession of the State of Michigan. Besides, they might cast a reflection upon those who have acted in good faith and who have been in the right without a question. I ask anybody to inspect either in person or by a representative the material in my possession and to receive such additional information as I shall give according to circumstances. The facts brought before me by members of the medical profession and the demands made of me by them place me in a position in which I must oppose any attempt from any source which may try to make a state of affairs, which is very clear, appear uncertain and cloudy.

I repeat, the material in my hands can be inspected at any convenient time, and I can leave it to anybody to form his own opinion on the subject.

EMIL AMBERG,
Former Michigan Member of the National Legislative Council of the American Medical Association.

February 8, 1906.

Some Problems in the Treatment of Pneumonia.—Egbert Le Fevre believes that the primary and essential action of the toxemia of the pneumococcus infection is that of stimulation. Restlessness and sleeplessness, and in children convulsions, are the expression of its effect upon the general nervous system. The writer thinks that the exhaustion noted later in the disease is a natural sequence of the stimulation of the early period, and follows the excessive work which has been done by the respiratory and circulatory systems. Accepting these facts, he declares that from the very beginning the physician's every effort should be directed toward controlling the toxemia and its effects. He advises employment of the methods which have been found most efficient in other acute and chronic toxemias—catharsis, diaphoresis, and diuresis. Care should be taken, however, that the treatment does not exhaust the patient. Unless contraindicated, the writer uses saline cathartics freely during the early days of the disease. If the toxemia is exaggerated the same external methods for causing sweating should be employed as those used in the treatment of acute uremia. He warns against the use of pilocarpin, but advises the use of hot drinks, liquor ammonii acetatis, and citrate of potassium. As there is generally kidney irritation in this disease, abundance of water is indicated. If there is nausea and vomiting so that the administration of water by the mouth is restricted, enemas of normal saline solution should be substituted. Venesection is indicated in those cases in which the patient seems to be overstimulated by the toxemia. Fresh air is necessary, but cold is not an essential element of the open-air treatment. The writer advises keeping the room at about 65° F. In cases in which there is pain, opium or one of its derivatives, as a rule, has the best effect. The writer condemns the tendency to resort to nitroglycerin in cases in which cardiac failure is suspected. He advises two classes of stimulants to be used in cases of loss of vasomotor control: (1) Those acting on the medullary centers—strychnine, caffeine, atropine, and cocaine; (2) those acting directly on the muscular tissue of the arterial system—digitalis, ergot, and suprarenal extract. The action on the blood vessels of suprarenal extract or adrenalin chloride is very rapid and energetic, but its effects are temporary. It should be used in the treatment of sudden vascular collapse. No case of pneumonia should be given up until death actually takes place.—*Medical Record,* February 24 1906.

Progress of Medical Science.

MEDICINE

In charge of
H. S. OLNEY

The Medical Aspects of Carcinoma of the Breast.—Osler writes on mammary cancer as seen by the physician, either at the outset of the disease or, in the late stages, as victims of internal metastases. The extent of the latter, it must be remembered, bears no relationship to the size of the tumor, for extensive general lesions may be associated with a small latent carcinoma.

In two thirds of Osler's cases, both breasts have been involved. One of the common observations is direct extension of the disease through the chest wall to the pleura or, more rarely, to the lung, with secondary involvement of the lymph glands. Pleurisy, with effusion, may come on insidiously, the only symptom being shortness of breath. Sometimes there may be severe pain. It is often difficult to decide whether or not the pleurisy is of a cancerous nature.

All the distressing pressure symptoms of tumor may be produced by glandular enlargements within the thorax, even though there be no signs of recurrence and no physical signs. As a rule, however, there is flatness on percussion and often disease of the sternum itself. The glands above the clavicle may be enlarged. Involution of a mediastinal growth may sometimes occur. Carcinoma of the lungs, secondary to carcinoma of the breast, is rare.

Direct extension may cause carcinoma of the peritoneum and recurring carcinomatous ascites is not uncommon. In such cases, the tumor in the breast may be latent or may be concealed by the patient.

Metastasis to the liver is more frequent than to any other organ, the liver becoming enlarged, irregular and nodular and the patient deeply jaundiced.

Metastases in the cranial bones or in the brain itself may cause cerebral symptoms. Among the most common and most painful secondary manifestations are lesions of the spine. They are most common in the atrophic form of scirrhus. Any part of the spine may be involved. Now and then such secondary growths become sclerotic and, shrinking, cause a decrease of the pressure symptoms. These usually occur in two stages (1) neuralgic, indefinite pains in the head, appearing from two months to two years after operation. Shingles is a frequent complication of this stage. (2) In most cases, usually a pressure paraplegia, often of the spastic type, resulting in the picture of paraplegia dolorosa.

In conclusion, the author emphasizes the necessity of giving morphine in sufficient doses to control pain.—(*British Med. Jour.*, Jan. 6, 1905.)

Opium in Myocarditis, Weak Heart and Dilated Heart. Musser says that there are sound clinical reasons for the belief that opium is a tonic in cardiac debility. Who has not seen the flagging heart of shock, induced by pain or other depressive measures, brought up by morphine? Who will not prescribe this drug in the sudden heart failure of myocarditis? Who does not give it in rheumatism for its tonic cardiac effect? Musser pleads for the continuous use of opium or morphine, also in myocarditis, to prevent angina pectoris or to lessen the effect or defer the dreaded asystole. He has had patients take, for months and months, small doses of the deodorized tincture or the extract of opium, thereby checking waste, reducing the susceptibility to peripheral sensations and replacing exciting stimulants, such as alcohol or strychnine, calming a perturbable nervous system and lessening the necessity for food to the relief of digestion, metabolism and elimination. fffff

In cases of weak heart, following exhausting diseases, after prolonged mental and physical pain and when not associated with organic changes in valves or muscle, opium is of advantage. In cases of failing compensation, with the onset of stasis, the heart is supported, especially if the unfortunate possessor is an impressionable subject who frets and fumes because of the ordinary irritations of life.

In the gradual engorgement from myocardial dilatation, in chronic parenchymatous nephritis and in arterio-sclerosis, it is of value. If the patient is hypochondriacal or hypersensitive, the second daily dose of opium invites sleep and induces a feeling of well being.

The dyspnoea of myocarditis is relieved or prevented by continuous small doses of morphine, for a long time. Musser has seen a form or stage of myocarditis with restlessness, Cheyne-Stokes breathing, dyspnoea and rapid pulse, helped by repeated and continued doses of opium in small amounts. The tachycardia of Graves' disease is relieved and, in three of his instances, it appeared to contribute to the cure of the disease. In the nervous and irritable subjects, opium is almost necessary to induce comfort.—(*American Jour. Med. Sciences,* January, 1905.)

SURGERY

In charge of

MAX BALLIN

Excision of Thymus Gland for Asthma Thymicum.—Cases of dyspnoea caused by hypertrophy, or tumor of the thymus, are very rarely diagnosed. Rehn and F. Koenig have each reported one case, where severe dyspnoea, in a child, was cured by a partial excision of the hypertrophied thymus. O. Ehrhard (Koenigberg) reports another case of the same character. A little girl, 2 years old, was suffering from dysponea for three months. Several spells of suffocation had occurred. Inspiration took place with loud stridor and with deep retractions in the region of the jugulum. Speech was hoarse. An enlargement of the thymus, or a mediastinal tumor could not be proved to be present. Intubation was first tried; the tube was easily inserted, but did not relieve the dyspnoea, hence it was clear that the obstruction of the trachea was lower down than the intubation canula reached. A median incision below the larynx, as for deep tracheotomy, revealed a very large thymus, the two apices of which could easily be seen above the sternum. The thymus was caught with forceps and under steady traction, was easily shelled out from the retro-sternal space. The wound was packed for a few days, in order to be able to do a tracheotomy if it should be needed. But the dyspnoea and suffocation never occurred again after operation. The wound was sutured five days after the operation and it could then be seen that the flattened trachea was returning to its normal shape. The total excision of the thymus was not followed in this case by any disturbances in the body. Especially was there no change in the number of blood cells.—(*Archiv fuer klinische Chirurgie, Vol. 78, Part III.*)

Acute Post-operative Dilatation of the Stomach, with Report of a Case Following Nephropexy.—Acute dilatation of the stomach, in its most severe type, is a rare condition and usually terminates fatally within a few days. As a post-operative complication of surgical conditions, it has received but scant mention in literature, and is frequently overlooked in the absence of a post-mortem examination. Halstead reports such a case after a nephropexy, in a girl 18 years old. The symptoms present after the operation were, nausea, frequent vomiting and slowly increasing distension of the stomach. On the fifth day, the abdomen was enormously distended and dull on percussion over its entire surface. The stomach tube was introduced and 2½ pints of fluid were withdrawn. This gave only short relief. Temperature ranged between 99° and 101°. The pulse rate increased slowly, reaching the maximum of 140 on the sixth day. On the sixth day, the patient vomited about five pints of fluid at once, and died suddenly. Autopsy showed an enormously distended stomach, filling the whole cavity, the first portion of the duodenum also immensely dilated, all other intestines collapsed; wall of stomach attenuated, but normal in appearance; no obstruction of the pylorus; peritoneum everywhere smooth and glistening. This acute post-operative dilatation of the stomach has been observed after all kinds of operations, for instance, after amputations of leg, and breast, etc. Fatal termination is the usual event but there seem to exist minor degrees of dilatation that speedily recover. The pathology of the condition is not quite clear. Symptoms of this post-operative complication are very characteristic:—vomiting, gradual increase of the quantity of the fluid vomited, with symptoms of collapse, distention of the abdomen, with dulness on percussion, and the immense amount of fluid that can be evacuated by stomach-tube. The treatment consists in elevation of pelvis, employment of stomach-tube, also surgical interference; gastric fistula or gastro-enterostomy could be considered.—(*Surgery, Gynecology and Obstetrics,* Jan. 1906.)

Acute Oedema of the Lungs Secondary to Ether Narcosis.—Acute oedema of the lungs is one of the immediate sequelae of ether narcosis, which, while undoubtedly comparatively rare, must fully be reckoned with. Pedersen reports the following case: A man, 30 years old, underwent an operation for hemorrhoids. The anesthesia was introduced by nitrous oxide gas, followed by ether. Stage of excitement was very great, so that the anesthetic had to be pushed. The operation lasted about twenty minutes and about four ounces of ether were used. Immediately after the operation the man became very blue, the respiration became hesitating and a very rapid general oedema of the lungs developed .The pulse went up to 120. The treatment consisted of active dry-cupping over every part of the chest, elevation of the foot of the bed, injection of atropine, strychnine and whiskey. Nitro-glycerin (a twenty-fifth grain) seemed to be of the greatest value. The critical condition lasted about forty minutes, after which the patient improved slowly. The writer found fifteen other cases of this kind in the literature, nearly all of which were fatal.—(*Annals of Surgery,* January, 1906.)

GYNECOLOGY AND OBSTETRICS

In Charge of

REUBEN PETERSON

Leucoplasia of Vulva, Vagina and Uterus.—Jayle and Bender have recently contributed a most valuable and interesting article upon this subject. Judging from the bibliography accompanying the article, very little attention has been given to the disease in countries outside of France. It is interesting to note, however, that Dr. Robert F. Weir, of New York, was the first to call attention to leucoplasia of the vulva. In 1875 he reported such a case in an article entitled, "Ichthyosis of the Tongue and Vulva."

According to the authors, leucoplasia is defined as an affection characterized clinically by the development of white areas, somewhat resembling the lesions of psoriasis, upon certain mucous or muco-cutaneous surfaces. Microscopically, the affection is distinguished by a marked thickening of the epithelial layers, associated with hypertrophy of the corneal layer, and a marked increase of round cells in the subjacent layers.

To 31 cases of vulvo-vaginal leucoplasia collected from the literature, the authors add two cases coming under their personal observation. It is interesting to note that over 50 per cent of these cases (17 out of 33), were complicated by carcinomatous degenerations. It was found, from a study of these cases, that leucoplasia of the vulva could be situated upon the labia minora, clitoris, or internal aspect of the labia majora, in fact, wherever the skin of the vulva approached the type of normal mucosa.

The characteristic lesions of leucoplasia are irregular, grayish yellow in color, oftentimes as white as silver or like pearl in appearance. The affected area is always adherent. Recent patches are transparent and give the appearance of having been touched with a pencil of nitrate of silver. Just as in leucoplasia of the buccal mucosa, the course of leucoplasia of the vulva is distinctly chronic; its progress is slow, but sure, only exceptionally are signs of improvement noted; cancerous degeneration of the leucoplastic areas was noted in more than 50% of these cases. The authors believe that while it cannot be stated that leucoplasia inevitably leads to epithelioma of the vulva, the lesions certainly predispose later on to epithelial changes. Leucoplastic areas in the vicinity of cancerous tissue show no characteristic changes. At first glance there are some points of similarity between leucoplasia and kraurosis. From their microscopic studies, Piderin and Pettit believe leucoplasia and kraurosis to be two distinct affections. Noto and Perrin take opposite views and consider the two affections one and the same disease, any difference being due to the stage at which their observations are made. Jayle and Bender have observed kraurosis a number of years in a patient who presented no signs or symptoms of leucoplasia or cancer. They agree then with Szasz, Piderin and Pettit and would hesitate to conclude that kraurosis is a later stage of leucoplasia.

Leucoplasia has never been studied in its developmental stage, and its progress can only be judged by different observations made at intervals of several years. Intense itching and intolerable pruritus, oftentimes causing insomnia, are among the permanent symptoms. Pain is only experienced upon the advent of cancerous degeneration.

The prognosis of leucoplasia is grave, because so many of the cases end in cancer. At times the changes in the epithelioma are slow in the extreme, but more often the process is rapid, and soon causes death. All but two of these patients had passed the menopause at the time the leucoplastic changes were observed, hence it is evidently a disease of advanced life.

Syphilis does not seem to be a natural factor in the production of the disease. The same may be said of diabetes. Complete and thorough extirpation is the most rational treatment.

There have also been four recorded cases of leucoplasia of the vaginal mucous membrane. As a primary affection it is probably rare. Extensive observations upon the histologic characteristics of leucoplasia of the vagina are lacking, but there is every reason to believe that eventually other changes are the same as those noted in leucoplasia of the vulva.

True leucoplasia of the vaginal portion of the cervix is also a very rare disease, only five such cases being reported. The cervix may be ulcerated, and is the seat of the characteristic leucoplasia changes. Local treatment of the condition seems to avail little, as the affected areas tend to become malignant. Amputation of the cervix seems to be the operation of choice. Finally, strange as it may seem, leucoplasia of the cervical and corporeal endometrium has been noted in a number of undoubted cases. In order for this to occur, the normal cylindrical epithelium of the endometrium must first become changed to epithelium of the squamous type. That this substitution can occur, has been shown by Heitzman, Ziller and others. The diagnosis of leucoplasia of the endometrium can only be established by curettage or hysterectomy. (*Rev. de Gyn. et de Chir. Abdom.* Tome IJ., Nov. and Dec., 1905.)

PATHOLOGY AND BACTERIOLOGY.

Production of Active Immunity with the Split Products of the Colon Bacillus.—It has long been known that animals treated with non-fatal doses of either living or dead colon germs acquired a certain degree of immunity to subsequent infections with this germ; and it follows that a certain portion of the germ must be responsible for this immunity. V. C. Vaughan, Jr., in his experiments, was able to separate a toxic portion and a residue which was non-toxic.

Daily injections of non-fatal doses of the toxic portion established a certain amount of tolerance up to twice the usual fatal dose, and also gave some active immunity to living colon germs. Thus, when an animal which has been treated with the toxic portion, later receives an injection of living germs which would prove fatal to a non-treated animal, the symptoms are the same as would occur with a non-fatal dose in an untreated animal.

With the non-toxic residue, however, the active immunity is much greater. This portion seems to be markedly bacteriolytic and very quickly breaks down the germ substance, liberating the toxic portion and producing the characteristic fall of temperature, etc., within an hour instead of within six or eight hours, as is usual with the control animal. Moreover, the control dies, while the treated animal recovers in a few hours. If the poison existed free in the culture medium, the control would show evidence of illness as soon as the treated animal, therefore we know that the poison must be intracellular and is liberated only when the germ substance is broken down.

Vaughan considers the immunizing group contained in the non-toxic residue to be of primary importance in the development of specific acquired immunity to this germ.—(*Jour. Med. Research,* November, 1905.)

The Influence of Light in the Production of Cancer of the Skin.—This by no means new subject is very thoroughly and ably handled by Hyde, the article evidently being inspired by the study of three cases of the very rare disease xeroderma pigmentosum. There are only about one hundred cases of this disease on record. Hyde, in describing the condition, says it might well be termed "childhood cancerosis." It occurs in young children about the age of two years, beginning as a cutaneous hyperemia, soon followed by a uniform discrete pigmentation of the exposed parts of the body with resulting symmetrical freckling of the skin in brown tinted macules. Then the skin becomes very rough, hyperemia and puffiness of eyelids ensue, whitish spots become perceptible between the macules, small telangiectatic vessels appear, and finally warts, usually multiple and often very malignant, develop in the affected regions. Uuna and nearly everyone who has carefully studied these cases regard it as indisputable that all this is due to the weakened resistance of the skin of the young child to the more refrangible rays of the solar spectrum, the hyperemia and pigmentation being simply attempts to prevent the injurious action of the light. The irritating light first causes a hyperemia, then pigmentation, then atrophy, and finally cancerosis.

The pigmented parts are always more pronounced on the exposed portions of the body. Some occur on the covered parts, more being in the regions adjacent to the exposed parts than in the regions further away; they seem to shade off gradually.

Hyde then takes up the statistical side of cancer in general. Statistics show that there is more cancer in rural than in urban communities. He says that the agricultural farmer furnishes nine-tenths of the male cancer mortality, and that this is not due to exposure to inclement weather but to the action of sunlight. Toilers in the intensely cold countries do not suffer so from this disease; neither do those in the very hot countries as Arabia, Egypt, and Africa, where the pigmented skins of the natives act as an efficient protection. He has prepared a map of the United States showing by colors the geographical distribution of cancer, and draws some interesting conclusions.

Conclusions:

1. The skin of the human body in a certain proportion of individuals, and in these only, is hypersensitive to the action of the actinic rays of the spectrum.
2. This hypersensitiveness may be exhibited in the production of either hyperemia, pigmentation, telangiectasis, atrophy, hyperkeratosis or cancerosis of the skin, or by all, at times in a determined order of succession.
3. In the form of childhood cancerosis known as xeroderma pigmentosum, the pigmentation, telangiectasis, etc., etc., resulting from exposure to rays of light are exhibited early in life, instances of this disorder being extremely rare.
4. These changes occur in adults much more frequently than in children, reaction to the play of actinic rays of light upon the surface being chiefly determined after the middle period of life has been reached.
5. Physiologic pigmentation of the skin in the colored races seems to furnish relative immunity against cancerosis of that organ.
6. The colored races apparently suffer less than the whites from cancer of other organs. This relative immunity may be due to the protection from the actinic rays of light furnished by the pigmentation of the integument.—(*Am. Jour. Med. Sciences,* Jan., 1906.

PHARMACOLOGY AND THERAPEUTICS

Plea for a More Simple Materia Medica.—Mason believes that our materia medica is not only too bulky but that it is even harmful to the practitioner and student. It should be our aim to use active principles in every case where they fully represent the desired action, rather than a fluid extract or a powdered drug, for the reasons that it is necessary to learn but one dose, and that in this way we can always have a reliable medicant.

Several examples are given of tests made of crude drugs, which proved that they were practically worthless. Unless the physician sees to it that his prescriptions are filled at a certain pharmacy, with whose stock he is acquainted, he cannot, by any means, be sure that his patient is receiving the desired dose.

Furthermore, many pharmacists must buy their crude drugs powdered, and hence have no guarantee of their purity, for they have not the apparatus necessary to properly powder them.

The strength of galenicals may be changed from time to time, necessitating another study of dosage and also making mistakes not only possible but easy.

The variations in strength of the tinctures of aconite, gelsemine, colchicum, belladonna and nux vomica are cited.

The use of active principles teaches the physician to think of physiologic action and does away with much of the guess work in prescribing. If alkaloids are so reliable as to be used in case of last resort, to secure certainty and results, why not use them all the time, in preference to liquid preparations which have to be constantly watched to secure reliability?—*Jour. So. Carolina Med. Assoc.*, Jan., 1905.

Treatment of Pulmonary Tuberculosis by a New Serum.—Alexander Marmorek, in a communication to the Académie de médecine, reviews two years' experience (comprising 40,000 injections) in the clinical application of antituberculous serum, which he now claims to be an established method of treatment. In order to meet the indications in the third stage, that of ulceration of the lung, in which there is a mixed infection with both the streptococcus and the tubercle bacillus, it would appear to be necessary to use both the antistreptococcic serum and the tuberculin. It occurred to Marmorek to inoculate a horse with both microbes in order to produce simultaneous immunization. The new serum or "double serum" obtained in this manner has, in fact, been used by him with success, especially in cases of hectic fever. The injections are claimed to be innocuous and the treatment to have, therefore, no contraindications. In the general discussion which followed the paper the claim of the antituberculous serum to be regarded as a specific treatment of pulmonary disease was not admitted; and the statement that the treatment was innocuous was denied. Experiments at the Hotel Dieu some years ago gave unfavorable results. Rabbits were inoculated with tuberculous sputum, and were treated with Marmorek's serum and the other half left untreated for comparison. The injections of serum were made personally by Marmorek. Every one of the rabbits thus treated died long before the control animals. In reply to these strictures, Marmorek claimed that the technique had formerly been at fault, but recently this had been improved. The testimony of a large number of experimenters proved that the injections as now conducted are harmless. Further experience will be required to definitely determine the real value of the treatment.—*New York Med. Jour.*, Jan. 27, 1906.

The Therapeutic Value of Warm Moist Air in the Treatment of Diseases of Children.—Theron Wendell Kilmer advocates the use of warm moist air in the treatment of children suffering from croup, bronchitis, asthma, pneumonia, and diphtheria. The moist air may be introduced into the crib or bed of a child under an elevated sheet or blanket, by means of an ordinary croup kettle, or administered by inhalation. After outlining the diseases in which moist air is used as a therapeutic agent, he gives some conditions under which a hot dry air may be efficacious. A child suffering from nephritis is placed on a rubber sheet, the white one laid over it, and the covers elevated only sufficiently to admit the heat, which is applied by one of several methods suggested by the writer. He emphasizes its value in the treatment of all rheumatic affections, and has used it with success in sprains.—*Medical Record*, January 27, 1906.

For external application in pruritus:

℞ Acid Salicyl., dr. i.
Sodii Biborat., dr. ii.
Alcohol.
Glycerine aa., oz. i.
Aquae q. s., ad. oz. viii.
Sig.: For external use.

NEUROLOGY

In charge of

C. W. HITCHCOCK

Association of Epilepsy with Myopathic Condition.—Onuf, of New York, reports some studies upon epilepsy which are more valuable as showing the very careful studies carried out at the Craig Colony, in an honest effort to throw any possible light upon the nature of this *terra incognita,* than as adding to our positive knowledge of the nature of this symptom-complex.

The effort was made to carefully select cases which might, so far as is possible, be regarded as idiopathic. Notes of the chief points in the histories of six cases are given, as are also memoranda of careful examinations. Photographs are printed showing muscular conditions present.

Summing up, he points out as common to the group partly muscular atrophies, partly defective muscular action manifested as:

1. Wing-like standing off of the scapulæ.
2. Atrophies of the scapular muscles.
3. Lordosis of the lumbar spine in erect position, disappearing in sitting position.
4. Pes valgus.
5. Involvement of the facial muscles (2 cases).
6. Electrical changes.
7. Fibrillary twitchings.

In view of his findings, he questions how many cases of epilepsy may, with any propriety, be considerd as idiopathic.

He is inclined to class his cases among the genuine myopathies.—*Journ. of Nervous and Ment. Diseases,* January, 1906.

The Etiology, Prognosis and Treatment of General Paresis.—Collins assumes, at the outset, the recognition of the facts that general paresis is now much more common than has been thought; that it is most frequent in our cities; that its clinical delineation has undergone a striking change in 25 years; that, although syphilis is the most important factor in its production, alcohol, stress, and excesses of all sorts play no unimportant role.

The somatic signs may precede the mental by from two to five years and once the disease is developed no yet-known form of medication seems to affect its course.

Collins analyzes 100 cases, of which 85 were males and 15 females. In 23, there was neurotic history in the ancestors. Positive or probable evidence of syphilis was adduced in 65 cases. The author's experience would tend to disprove the theory that general paresis is never a manifestation of recent or very remote syphilis.

Nine cases gave history of preceding trauma, yet in some of these there had been syphilis too. Development of somatic symptoms, within six months after injury, is significantly looked upon as very suspicious of syphilis as the determining factor.

The subject of treatment is a large one, and cures are not now being as positively reported as was formerly the case. Opinion is coming to be more settled that the disease is practically an incurable one. Intensive mercurialization has been much used in France and some strong claims made as to results obtained. In three cases so treated, Collins reports improvement, while in seventeen other cases, similarly treated, no results whatsoever were secured.

Just as the general practitioner of experience may detect, in very early stages and by symptoms which commonly escape observation, the signs that tell of an incipient aortic stenosis, so here, he believes, the neurologist of experience may very early detect evidences which speak to him of a probable general paresis to follow.

Any stiffness of pupils, even slight evidences of facial or labial tremor, disordered reflexes, etc., may well deter a diagnosis of neurasthenia, arouse suspicion as to general paresis, and make advisable a reference of the case to a neurologist who will apply such psychologic tests of memory, apperception and mental coördination as may throw further light upon the case. Especially should particular attention be paid to possible defects in memory.

Prognosis depends largely upon how early diagnosis is established, the clinical type of the disease, and the age of the patient.

The less pronounced the symptoms and the longer the patient keeps to his occupation and so neglects his treatment, the more hopeless the case. Prognosis is regarded as most hopeless in the young.—*Medical Record,* January 27, 1906.

Osmic Acid Injections.—B. F. Eastman reviews the history of the use of osmic acid injections for neuralgia in the literature, and reports his own experience with the method. He has injected osmic acid for neuralgia nine times in seven patients, with more or less permanent relief in all but one, and with complete relief up to the time of reporting in several. The usual dose was ten drops of a 2 per cent. solution in each injection, sometimes also forcing a few additional drops into the perineural fatty tissues.—*Jour. A. M. A.,* Feb. 24, 1906.

GENITO-URINARY SURGERY

In Charge of

W. A. SPITZLEY

The Imperative Treatment of Urinary Retention.—This condition, liable to be met with at any time by any practitioner, is often an emergency demanding immediate and intelligent care. It is necessary not only to relieve the patient of the pain and distress of a long, over-distended bladder, but frequently, if unwise or improper instrumentation has been indulged in, bleeding or beginning infection require urgent interference to save the patient from disastrous illness or even death. The possible causes of such retention are many; as a rule, however, physical obstruction in the urethra, resulting from traumatisms, strictures, foreign bodies or extensive acute swellings produce the condition.

The diagnosis is usually easy; the history of inability to empty the bladder, together with increasing desire to do so, extending over a number of hours or even days; pain in the penis, bladder, back and lower part of the abdomen; tenderness, becoming greater with the development of a gradually enlarging tumor in the supra-pubic region; often a bleeding and swollen meatus; all these, especially when a chill followed by a temperature above normal has intervened, make plain a state of affairs requiring prompt action.

Some cases, if seen early, can be relieved by gentle and skillful catheterization; in most cases, however, coming into a hospital or into the hands of a consultant, instrumentation has already been indulged in to such an extent that it is unwise to inflict even the gentlest additional injury upon already injured tissues and other methods of relief must be sought. If a warm sitz bath, irrigation of the rectum with warm normal saline solution and irrigation of the urethra with warm boric acid solution have failed to cause the patient to pass urine, then with proper cleanliness, the bladder should be emptied by supra-pubic aspiration. After such relief, an opium suppository will assist in diminishing pain and in insuring much-needed rest. Aspiration may be repeated as often as necessary, the author in one case having continued it for twenty successive days with no unfavorable results. Hot poultices or applications to the perineum are valuable aids. Abstinence from urethral instrumentation is of the greatest importance; it often leads to the disappearance of the retention and always prepares the patient the better for the operation of urethrotomy, which must so often follow.

When the retention is associated with acute urethral infections, it is far wiser to employ supra-pubic aspiration than to force a catheter through a purulent urethra.

The author emphasizes aspiration for the following reasons:

1. Supra-pubic aspiration affords almost instantaneous relief in an exceedingly serious condition.

2. It is at times absolutely indicated. There is no alternative measure which can be substituted for it.

3. It is harmless when skillfully performed and is always available.

4. It can be carried out for days if necessary without danger and with little or no pain.

5. It is a valuable preparatory measure for the major operation.—(BISSELL, *Internat. Jour. of Surg.*, Dec. 1905.

A Case of Hysterical Anuria.—Garceau and Courtney report this case:

The patient, a young woman who had always been "nervous and high strung," had had a number of unfortunate occurrences in her life. At the age of fifteen, she suffered a great shock, having been assaulted at night; though her assailant failed in his purpose, she was thoroughly frightened. Then she had grippe, which disease was followed by a period of unconsciousness, lasting on and off for several weeks. At eighteen she was married, and for twelve years lived unhappily, under considerable mental stress. At twenty-seven she had her skull fractured, was ill for ten weeks, unconscious at intervals; at twenty-eight she had a moderate injury to the back of her neck as the result of a falling window sash. Since her last injury she has had these frequently recurring symptoms—retention of urine, oliguria and severe vomiting. When at her worst, she has complete anuria for two or three days, and nearly always has coincident vomiting; hematuria was present, after the injury to her neck, intermittently for a year. Several attacks of anuria have come on immediately following the shock of a physical injury, but some have occurred with no determinable exciting cause. Between the periods of complete anuria, the patient will for two or three months pass only a few ounces of urine daily. There has been one convulsion, not uremic but hysterical in character; there has been present also, on occasion, oedema of the face and of the extremities. In spite of her severe attack of vomiting and anuria, the patient recovers promptly and at once assumed an appearance of perfect health.

The authors believe this case to be one hysterical in nature, because the symptoms noted are all well recognized symptoms of hysteria, the most significant of which is her ability to rally and appear well at short notice; in addition, of course, it is to be borne in mind that careful examination of the urinary organs and analyses of the urine have shown practically no abnormality, and that possible lesions of the brain and spinal cord have been eliminated.

Cases of hysterical anuria, in which anuria exists as a more or less permanent symptom, unassociated with severe vomiting or purging, are extremely uncommon. In conjunction with vomiting, they are less rare; it is supposed that in those of the latter form, the excretion of many of the products of metabolism ordinarily found in the urine are vicariously disposed of by vomiting, by diarrhoea or by excessive perspiration. It is observed that when the secretion of urine becomes normal, as it frequently does without determinable cause, the vicarious phenomena disappear. —(*Am. Jour of Urology*, January, 1906.)

LARYNGOLOGY

In charge of

J. E. GLEASON

Papilloma of the Larynx in Children.—J. P. Clark reviews the literature of papillomatous growths of the larynx and reports fourteen additional cases admitted to the Mass. General Hospital between 1873 and 1904. As a result of personal experience and a review of reported cases, the writer will in the future treat these conditions by tracheotomy and absolute non-interference with the papillomata until the period of active growth has passed. This decision is made for the following reasons: Papillomata will not yield to any form of treatment thus far attempted, however radical, until the period of active growth has passed. Clinical experience has shown that active growth is limited to the early years of life, cases of rapid recurrence after removal occurring exclusively in childhood, when cellular activity is at its highest. In a large majority of cases, attempts at removal during this period only increase the rapidity of recurrence. Children can safely wear tracheotomy tubes for any length of time, as the danger of resulting respiratory affections is not great. Tracheotomy should be practiced as advised by McKenzie, as soon as aphonia becomes permanent, without waiting for dyspnoea. McKenzie reports seven cases treated by this method, five of which were completely cured without further intervention, in from five to fifteen months. In case the papillomata do not spontaneously disappear, the age at which intra-laryngeal manipulation may with good results be instituted, varies in different cases, but should never be undertaken prior to the tenth year. Operation should always be intra-laryngeal.—*Boston Medical and Surgical Journal, October* 5, 1905.

Zur Symptomatologie des Empyema Antri-Highmori.—Hecht urges that general practitioners should bear in mind the remote local and general conditions which can depend upon empyema of the accessory sinuses of the nose. Very often they have occasion to see marked disturbances of digestion and nutrition and severe anæmic conditions which are consequent upon continued swallowing of decomposed sinus secretion. He illustrates by reporting the case of a woman 42 years old, who was taken ill with pain in the lower extremities, fever, malaise, and a sensation of burning in the hands and feet. On physical examination he diagnosed parametritis dextra, associated with multiple neuritis. The former yielded to the ordinary treatment, and the fever subsided. The neuritis made no progress, the general weakness and inanition increasing. Attention was first called to the sinuses by difficulty in swallowing and by pain in the left ear due to a catarrhal inflammation of the eustachian tube. This led to the discovery of pus in the left middle meatus of the nose, with swelling of the middle and inferior turbinates, and sensitiveness on pressure over the external antral wall. Opening the antrum and thorough cleansing relieved the local symptoms and brought about a rapid improvement in the genral condition of the patient.—*Munch. med. Woch.*, Vol. 52, No. 37.

Zur Diagnose der Neubildungen der Kieferhohle: Chiari states that new growths of the antrum of Highmore, both benign and malignant, generally escape detection until they have either distended the cavity or broken through some part of its walls. Malignant growths as a rule are not diagnosed until the nose, throat, or face is involved. Localized pain, soon followed by a bloody, ill smelling, suppurative discharge, the result of early disintegration, are cardinal symptoms. Circumscribed ectasia of an antral wall with localized formation of granulation tissue, all of rather rapid development, as well as softening of the middle wall evidenced on probe puncture are important accessory signs. Severe localized pain is almost never lacking in the later stages and is often accompanied by fistulous openings and secondary glandular involvement. The large majority of benign tumors produce no symptoms. Simple cysts, multiple or single, are often the only evidences of past acute inflammatory processes. Dentigerous cysts, although not truly of antral origin, often encroach upon the antrum and cause bulging of its external wall. Polypi are found practically regularly in chronic inflammations, and produce little disturbance. The presence of angiomata is suspected when antral bleeding, with the absence of other signs of malignancy, occurs spontaneously, and is increased on syringing. An interesting case of this kind is reported. Osteomata, when of sufficient size to cause antral distention, often break down and offensive discharge results. Whenever a new growth of any kind is suspected, a large opening should be made through the canine fossa, allowing thorough examination and appropriate treatment. An early exploratory operation in all cases of suspected malignancy is urged.—*Deutsch. med. Woch.*, Sept. 23, 1905.

RADIOGRAPHY AND ACTINOTHERAPY

In charge of

H. R. VARNEY

Phototherapy at the Finsen Institute.—Fordyce, in a recent visit at the Finsen Institute, was impressed by the gratifying results obtained in the treatment of lupus. He believes that the success of phototherapy at the Finsen Institute depends on the care exercised in its application, the experience of years in the management of such cases and the careful supervision of the patients so that relapses can be noted and treated. The intensity of the light obtained from the lamps in the Institute is probably also a potent factor in their results, as the light produced by many lamps made after the Finsen-Reyn model is too feeble to favorably influence lupus.

The time and expense required for the cure are also important considerations in the employment of this method in our public dispensaries. If equally good results can be obtained by the Roentgen rays, which is strongly denied by those in charge of the Finsen Institute, it is far more convenient, less expensive and time consuming. Further experience, however, will be required to determine the relative merits of the two modes of treatment and the exact indications for each. It must be granted though that phototherapy as used in the Finsen Institute cures the majority of cases of lupus of the skin with less deformity than could be hoped for before the brilliant conception of its founder.—*Journal of Cutaneous Diseases.*

X-Rays Should be Used by Physicians Only.—An interesting discussion, in the French Academy of Medicine, followed a paper by Debore, who strongly advocated that the X-ray should be used by physicians only. After the discussion, the Academy appointed a committee to study the question and, if necessary, provide for legislative measures to check the abuse of the rays in lay hands.

Debore states that it is unhappily true that some surgeons habitually turn over their work in radiography, both in hospital work and in private practice, to non-physicians. M. Debore was in doubt whether it would be advisable to interdict non-physicians from making radiographs, but he had no doubts whatever about forbidding them from practicing radiotherapy.

The folly of allowing non-physicians to practice radiography is apparent for many reasons. First of all, in the interest of the profession at large, and because it endangers public security. The Congress of Radiology recently held at Berlin, regarded the question just as it should be. Because of the proven gravity of the effects of the X-rays on the perpetuation of the race, and also because of its other admitted powers it should be forbidden for anyone, not a physician, to use it even for diagnostic purposes.

To make a radiograph is not to make simply a photograph. It is in 99 per cent. of cases to make a diagnosis, for all the value of an X-ray picture is in the interpretation. Above all, it is making a diagnosis by the aid of a very dangerous agent. The X-rays are irritant and destructive, and, as with all such substances, they should never be manipulated except by a trained physician. *Bull. off. de la Soc. Francaise D'Elect. et de Radiologie.*

The Treatment of Ring Worm of the Scalp by the Roentgen Ray.—Fox, in a recent consideration of this subject, refers to the use of Roentgen therapy as a method which will revolutionize the treatment of ring worm.

The author reports uniformly successful results in all cases which have been treated in the Light Department of Westminster Hospital. By suitable dosage and selection of the rays, which can now be regulated, depilation may be effected without serious damage to the scalp. The rays are concentrated on the diseased areas, the unaffected areas being carefully protected. After an interval of a few weeks, the hair, which has fallen out, is replaced by a new, healthy growth.

The author considers the treatment economical as compared with others. It is rapid and painless. The danger of infection of others is rapidly removed. The only disadvantage is the period of baldness.

Fox is satisfied that this treatment will become the recognized one for this disease, wherever the ray is obtainable. Sabourand has now definitely established this form of treatment in the municipal ring worm schools of Paris.—*Pediatrics,* August, 1905.

Danger and Protection in X-Ray Work.—Lehmann says that the best means of protection is a gown of impermeable material. Complete suits have been made of material of different degrees of safety, the heavier and bulkier the better, and sheet lead is the only safe thing. The apron of Roentgen-proof materia reaches from the neck to the knees; the cap covered the face and head and was provided with lead glasses. The gloves were also ray-proof, but neat enough to permit of handling screen and apparatus.—*Medical Record,* Feb. 3, 1906.